



Administration Report of the
Public Works Department in the
Bombay Presidency for the Year
1929-30 *to* 1937-38

With a detailed review of the Civil and Military
Works

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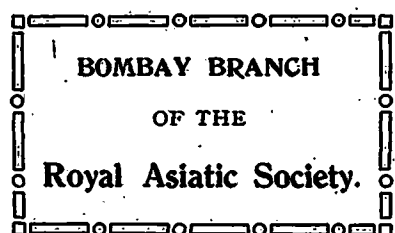
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DIAGRAM SHOWING PUBLIC WORKS EXPENDITURE

LAKHS

300

200

190

180

170

160

150

140

130

120

110

100

90

80

70

60

50

40

30

20

10

0

P A M I N E W O R K S

CIVIL WORKS PROVINCIAL
IRRIGATION WORKS
ESTABLISHMENT
ROADS & BUILDINGS
CENTRAL MILITARY WORKS
DISTRICT LOCAL FUND WORKS
ESTABLISHMENT IRRIGATION
CONTRIB. WORKS ORDY. & LOCAL FUND
CENTRAL CIVIL WORKS

1899-90

1900-91

1901-92

1902-93

1903-94

1904-95

1905-96

1906-97

1907-98

1908-99

1909-10

1910-11

1911-12

1912-13

1913-14

1914-15

1915-16

1916-17

1917-18

1918-19

1919-20

1920-21

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1922-23

1923-24

1924-25

1925-26

1926-27

1927-28

1928-29

1929-30

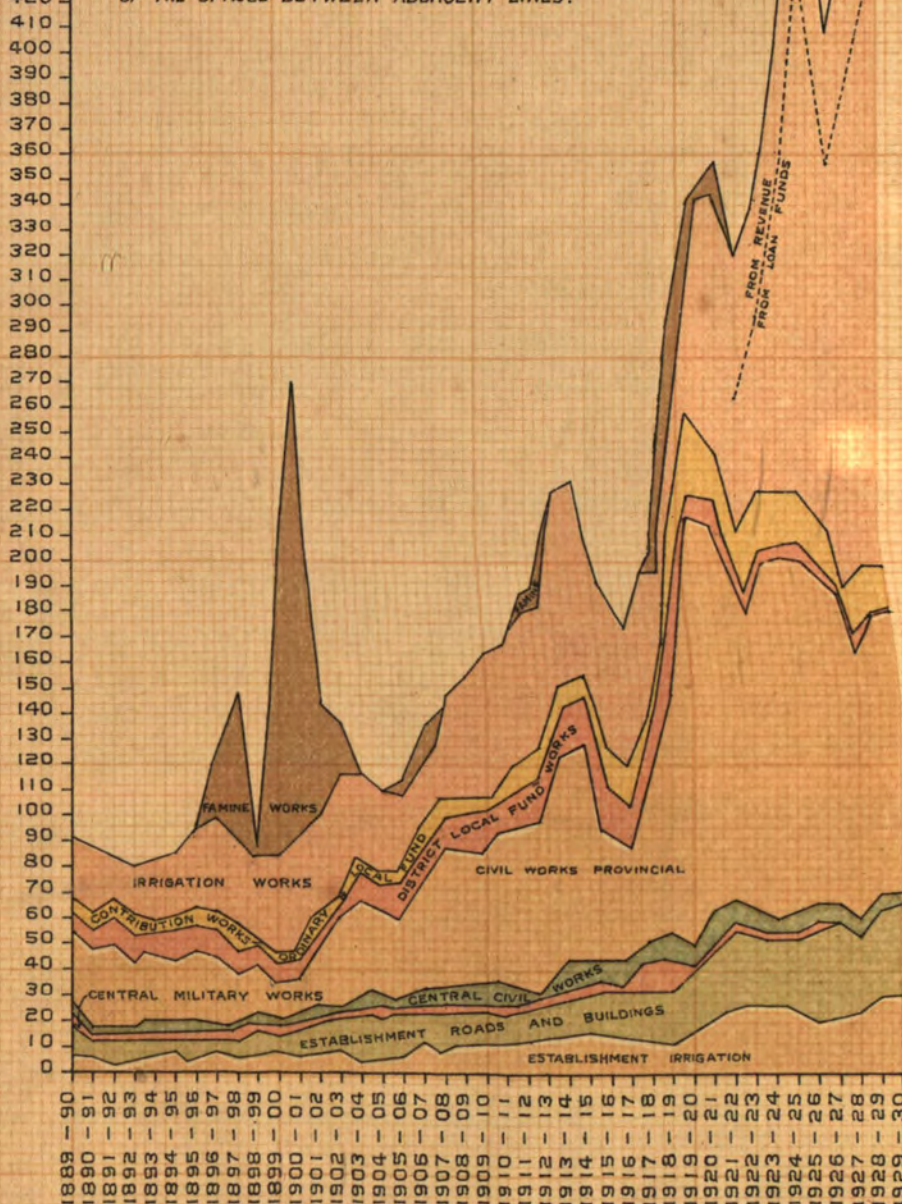
CANAL WORKS

PA MINE WORKS

FAMILY WORKS

DIAGRAM SHOWING PUBLIC WORKS EXPENDITURE.

EXPENDITURE ON THE DIFFERENT HEADS OF ACCOUNT IS REPRESENTED ON THE DIAGRAM BY THE BREADTHS OF THE SPACES BETWEEN ADJACENT LINES.



DIAGRAM

SHOWING
EXPENDITURE ON IRRIGATION WORKS
IN THE PUBLIC WORKS DEPARTMENT
FROM
LOAN FUNDS, REVENUE & CONTRIBUTION

LAKHS

230

220

210

200

190

180

170

160

150

140

130

120

110

100

90

80

70

60

50

40

30

20

10

0

1922-1923

1923-1924

1924-1925

1925-1926

1926-1927

1927-1928

1928-1929

1929-1930



DECCAN & GUJARAT EXPENDITURE (LOAN FUNDS)
SIND MAINTENANCE & REPAIRS EXPENDITURE (REVENUE)

LLOYD BARRAGE & CANALS CONSTRUCTION (LOAN FUNDS)

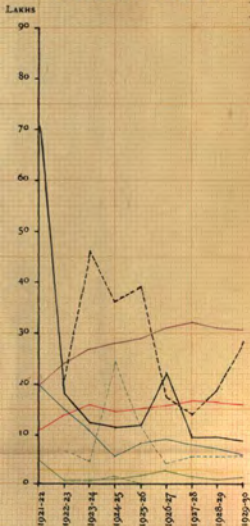
SIND EXPENDITURE (LOAN FUNDS)

DECCAN & GUJARAT MAINTENANCE & REPAIRS EXPENDITURE (REV.)
DECCAN & GUJARAT NEW WORKS (REVENUE)
SIND NEW WORKS (REVENUE)

DECCAN, GUJARAT & SIND CONTRIBUTION WORKS

PRESIDENCY PROPER AND SIND.

PRESIDENCY PROPER.



— REPRESENTS 41 C.W. EXPENDITURE ON BUILDINGS FOR ORIGINAL WORKS.

60	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482
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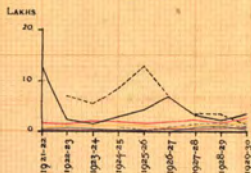


DIAGRAM SHOWING TOTAL EXPENDITURE
IN THE
PRESIDENCY PROPER AND SIND.

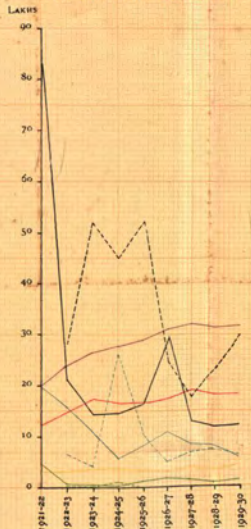


DIAGRAM SHOWING THE EXPENDITURE ON D.L.B. ROADS IN THE PROVINCE PROPER AND SIND. (ORIGINAL WORKS AND REPAIRS)

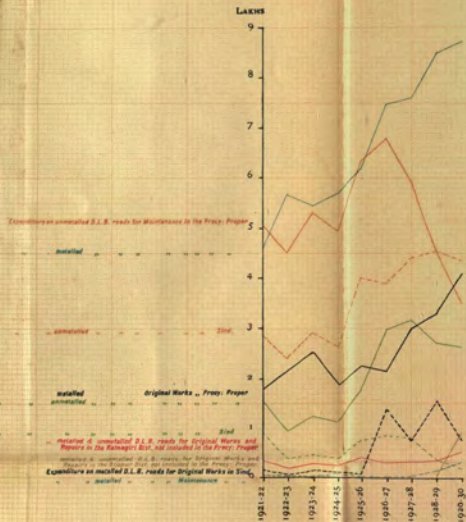
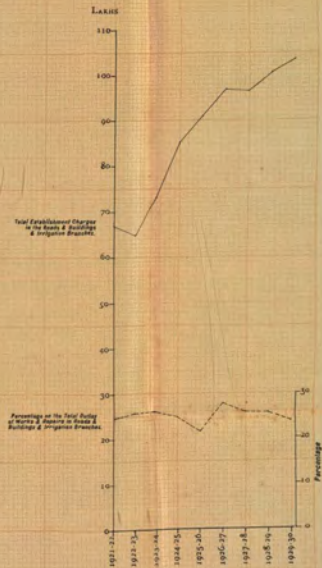
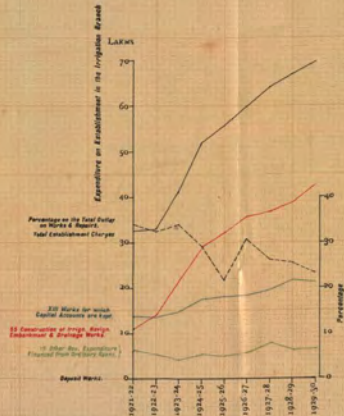
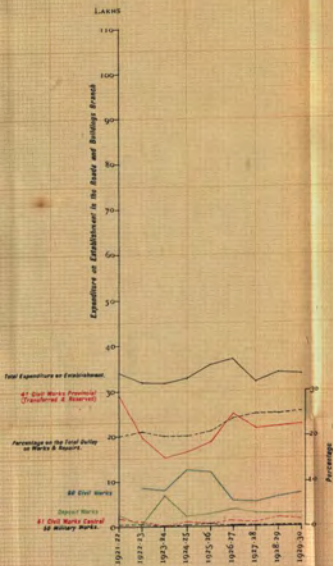


**DIAGRAM SHOWING EXPENDITURE
ON ESTABLISHMENT
IN THE
ROADS & BUILDINGS & IRRIGATION BRANCHES
OF THE
PUBLIC WORKS DEPARTMENT
AND
PERCENTAGES TO THE TOTAL OUTLAY ON WORKS AND REPAIRS.**



PUBLIC WORKS DEPARTMENT.
BOMBAY PRESIDENCY.

ADMINISTRATION REPORT WITH A DETAILED
REVIEW OF THE CIVIL AND MILITARY
WORKS FOR 1929-30.

I—DIRECTION.

During the year under report Mr. R. T. Harrison, C.S.I., I.S.E., Chief Engineer for Irrigation and Secretary to Government, proceeded on leave preparatory to retirement with effect from 2nd April 1929. In consequence of this Mr. D. R. H. Browne, O.B.E., A.K.C. (Lond.), M.I.E. (Ind.), I.S.E., was appointed Chief Engineer, Roads and Buildings, and Secretary to Government and Mr. C. M. Lane, I.S.E., was appointed Chief Engineer for Irrigation and Joint Secretary to Government. Pending the arrival of Mr. Lane from Sind Mr. W. L. C. Trench, I.S.E., Deputy Secretary to Government, acted as Chief Engineer for Irrigation and Joint Secretary to Government in addition to his own duties until the 19th May 1929.

II—ADMINISTRATIVE MEASURES.

ESTABLISHMENT.

2. Two appointments were made to the Europe-recruited branch of the Indian Service of Engineers. In the India-recruited branch of the service, one appointment was made in the College Section and one in the promoted Section. Although the guarantee given to the College of Engineering, Poona, expired in 1928, one student was appointed from that College under special orders of the Government of India as the rules for recruitment in India to the Indian Service of Engineers had not yet been published.

3. Four graduates from the College of Engineering, Poona, and the N.E.D. Civil Engineering College, Karachi, were appointed as "candidates" to the Bombay Service of Engineers and one promotion was ordered from the Bombay Subordinate Engineering Service to that service.

III—TERRITORIAL CHANGES.

4. The continuance of the following Divisions was sanctioned by the Government of India up to the dates mentioned against each :—

Persian Gulf Division	..	23rd January 1930. This Division has since been taken over by the Government of India under their control from 24th January 1930.
Poona Drainage Construction Division	..	.. 30th June 1931.
Lake Whiting Division	..	.. 28th February 1931.
Malsiras Division	..	.. 28th February 1931.
Indus River Gauging Division	..	.. 31st October 1930.
Pravara Canals Division	..	.. 31st March 1931.

On the Lloyd Barrage and Canals Construction Scheme, the continuance of the Draglines Division and the Manchar Drainage Division was sanctioned up to 30th June 1930. A temporary Executive charge was created for a period of four months for the purpose of counting and checking stores and verifying stock materials in the Stores and Draglines Division. The Stores and Quarries Divisions were amalgamated with effect from 1st January 1930 and the combined Division was designated the Quarries and Stores Division.

5. The Ekruk Tank Sub-division of the Sholapur Division was abolished with effect from 1st February 1930. The name of the Ahmedabad Sanitary Sub-division of the Public Health Circle was changed to the Gujarat Sanitary Sub-division. The headquarters of the Mayni Sub-division of Satara Division were shifted from Mayni to Vita. Sanction was accorded to the temporary removal of the headquarters of the Chiplun sub-division of the Ratnagiri Division from Chiplun to Dapoli from 20th November 1929. The continuance of the Nasik Road Central Prison sub-division of the Nasik Division was sanctioned for a further period of six months up to the end of September 1930. The headquarters of the Chandor Sub-division of the same Division was changed from Chandor to Nasik.

6. The continuance of the following Sub-division was sanctioned up to the dates mentioned against each :—

Nira Left Bank Canal Division.

Head Remodelling Sub-division	}	31st July 1930.
Tail Survey and Remodelling Sub-division		
.. .. .		

Lake Whiting Division.

Bhatgar Sub-division	}	28th February 1931.
Padegaon Sub-division		
Nimblak Sub-division		
Nateputa Sub-division		

Malsiras Division.

Malsiras Sub-division	}	28th February 1931.
Mohod Sub-division		

Fuleli Canals Division.

Project Sub-division	..	..	31st July 1930.
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7. A new Sub-division called the Distributary Remodelling Sub-division in the Nira Left Bank Canal Division was created for a period of three years with effect from 1st April 1929.

The formation of a new temporary Construction Sub-division called the Desert Buildings Sub-division in the Eastern Nara Division was sanctioned with effect from 1st June 1929 to 28th February 1930.

Formation of two Construction Sub-divisions Nos. I and II in the Fuleli Canals Division was sanctioned from 11th November 1929.

8. The Baghar Uchito Bund and Baghar Sub-divisions in the Karachi Canals Division were amalgamated in the year under report. The amalgamated Sub-division was called the Baghar Sub-division and its headquarters were fixed at Pir Patho.

9. The Indapur-Nira and Baramati-Sangvi roads (56 and 8 miles respectively) were transferred from the charge of the Inspecting Assistant Engineer, Nira Left Bank Canal, to the Vir (32 miles) and Tail Survey and Remodelling Sub-division (32 miles) of the Nira Left Bank Canal Division.

The maintenance of the Nara Supply Channel was transferred to the Lloyd Barrage administration with effect from 1st April 1929.

10. Under the Lloyd Barrage and Canal Construction Scheme 88 Sub-divisions were created up to the end of March 1930.

MISCELLANEOUS.

11. The temporary post of Accounts Officer sanctioned for the preparation of the Public Works Department Manual was continued for two months during the year. The concession of overseas pay was extended, with effect from 1st January 1920, to the officers of the Indian Service of Engineers of Asiatic domicile recruited in England up to and including the year 1924 otherwise than under the 10 per cent. rule.

12. A special officer of the rank of Deputy Accountant General was appointed by the Finance Department to examine the organization of the Public Works Department establishments, their geographical distribution and the possibilities of reducing them. The reports submitted by him were under consideration during the year.

A temporary post of Executive Engineer on Special duty was sanctioned in the Public Works Department Secretariat in connection with the problems of road development for a period of about three months.

IV—DETAILED REVIEW.

A—CIVIL BUILDINGS.

During the year under review the Roads and Buildings Branch of the Public Works Department of the Presidency executed works involving a total expenditure of Rs. 1,84,80,757. The more important details are given under the various heads below :—

Central Services.

<i>Customs—</i>						Rs.
On works	..	..	..	..	..	1,64,271
On repairs	..	..	..	..	..	45,961
				Total	..	2,10,232

Quarters for Preventive Officers of the Bombay Customs Department at Matunga, Bombay, were completed and handed over to the Customs Department.

New bungalow for the Coast Guard Inspector at Surat was in progress.

Quarters for six European and six Indian Preventive Officers and 24 servants at Keamari were completed.

<i>Salt—</i>					Rs.
On works	..	..	..	..	50,673
On repairs	..	..	..	..	1,56,652
Total					2,07,325

Preventive Officer's bungalow at Mira near Bhaynder in the Thana Division was completed.

<i>Opium—</i>					Rs.
On repairs	..	..	..	..	96

Jails and Convict Settlements—

On works	..	..	..	..	599
----------	----	----	----	----	-----

Police—

On works	..	..	..	..	39,928
On repairs	..	..	..	..	1,571

Total .. 41,499

Ports and Pilotage—

On works	..	..	..	..	3,043
On repairs	..	..	..	..	207

Total .. 3,250

Ecclesiastical—

On works	..	..	..	..	1,441
On repairs	..	..	..	..	41,060

Total .. 42,501

Political—

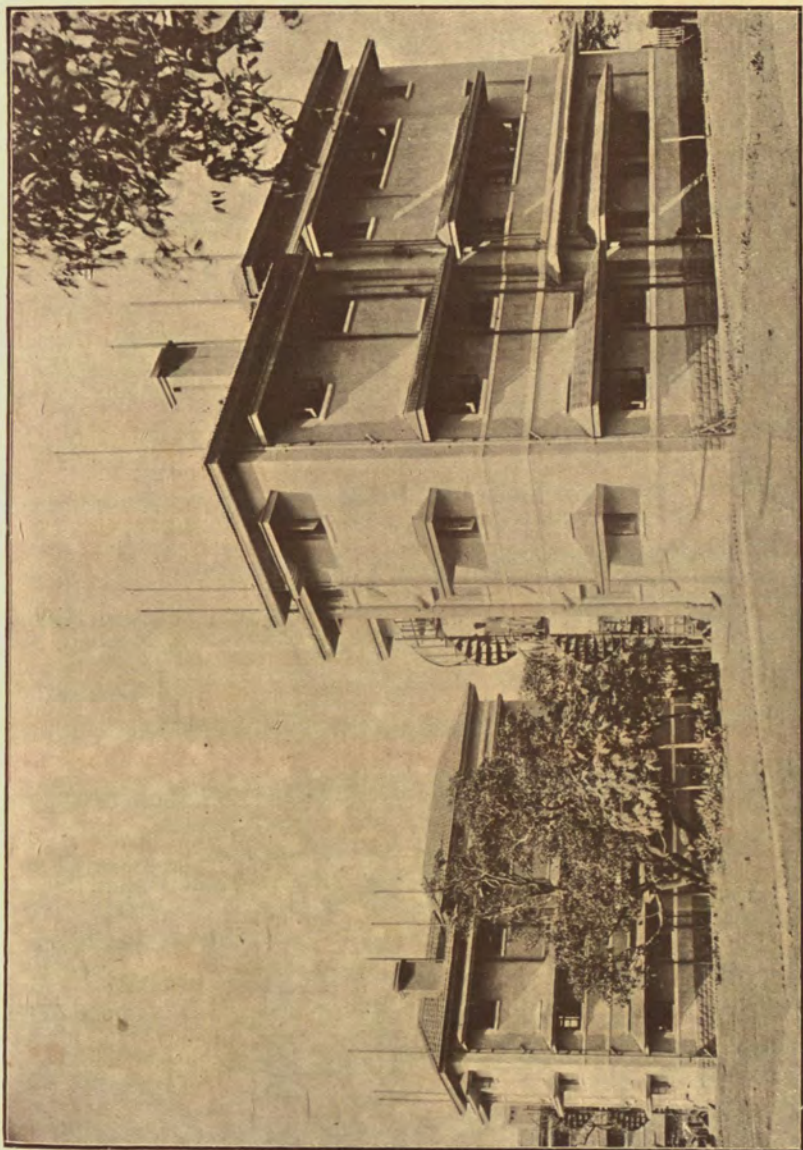
On works	..	..	..	..	6,717
On repairs	..	..	..	..	30,055

Total .. 36,772

Scientific Department, Meteorological—

On works	..	..	..	..	1,532
On repairs	..	..	..	..	3,705

Total .. 5,237



QUARTERS FOR THE PREVENTIVE OFFICERS OF THE BOMBAY CUSTOMS DEPARTMENT
AT MATUNGA.

Total cost of the building ...	Rs. 4,71,708.
Date of commencement ...	December 1927.
Date of completion ...	November 1929.

Education other than European and Anglo-Indian Education—Primary—

					Rs.
On works	..	..	..	..	4,937
On repairs	..	..	..	..	182
				Total ..	5,119
<i>Medical—</i>					
On repairs	..	..	..	..	7,620
<i>Public Health—</i>					
On works	..	..	..	..	797
On repairs	..	..	..	..	1,779
				Total ..	2,576
<i>Mint—</i>					
On works	..	..	..	..	2,489
On repairs	..	..	..	..	7,000
				Total ..	9,489
<i>Currency—</i>					
On works	..	..	..	..	4,320
On repairs	..	..	..	..	5,676
				Total ..	9,996
<i>Miscellaneous Departments—</i>					
On repairs	..	..	..	..	88
<i>Aviation—</i>					
On works	..	..	..	..	2,363
<i>Civil Works—</i>					
Buildings—					
On repairs	..	..	..	..	52
<i>Communications—</i>					
On repairs	..	..	..	..	1,998
<i>Miscellaneous—</i>					
On repairs	..	..	..	..	2,150
<i>*Post Offices—</i>					
On works	..	..	..	..	1,29,769
On repairs	..	..	..	..	46,193
				Total ..	1,75,962

The new Post office main building at Ahmedabad was practically completed.

* From the year 1921-22 the expenditure on Post and Telegraph Buildings has been transferred to the Accountant General, Post and Telegraphs.

<i>*Telegraphs—</i>					Rs.
On works	..	..	..	..	9,667
On repairs	..	..	..	..	20,530
Total					30,197

Quarters for certain Telegraph officials in the compound of the Bhusawal Telegraph Office were in progress.

<i>†Archæological—</i>					Rs.
On works	..	..	..	..	609
On repairs	..	..	..	..	75,143
Total					75,752

<i>Military works—</i>					
On works	..	..	..	..	445
On repairs	..	..	..	..	64,243
Total					64,688

<i>Bombay Development—</i>					
On repairs	..	..	..	..	2,713

Provincial Services.

<i>Land Revenue—</i>					
On works	..	..	..	..	6,607
On repairs	..	..	..	..	4,506
Total					11,113

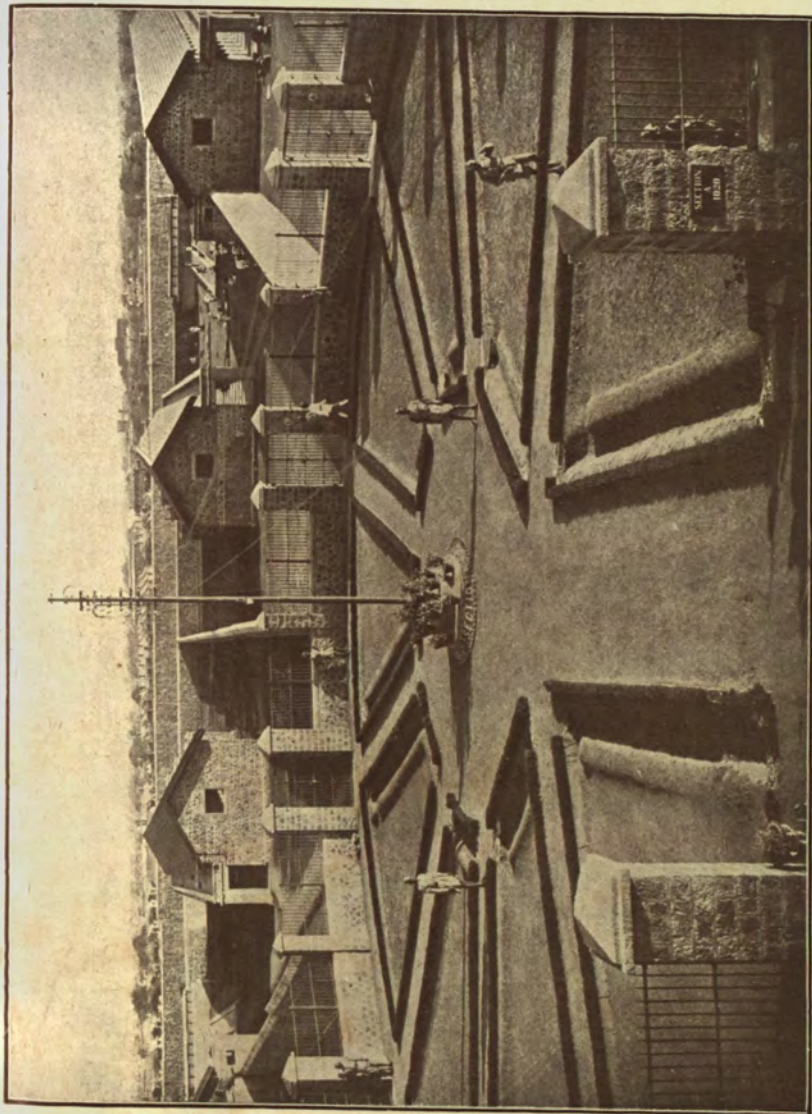
<i>Excise—</i>					
On works	..	..	..	..	25,802
On repairs	..	..	..	..	35,757
Total					61,559

<i>Forests—</i>					
On works	..	..	..	..	7,468
On repairs	..	..	..	..	7,513
Total					14,981

<i>Registration—</i>					
On works	..	..	..	..	207
On repairs	..	..	..	..	416
Total					623

* From the year 1921-22 the expenditure on Post and Telegraph Buildings has been transferred to the Accountant General, Post and Telegraphs.

† From the year 1921-22 the expenditure on Archæological works has been transferred to the Accountant General, Central Revenues.



NASIK ROAD CENTRAL PRISON. BARRACK YARD—VIEW FROM CENTRAL TOWER.

Date of Photo	...	26th April 1930
Date of commencement	...	5th April 1926
Estimated Cost	...	Rs. 4,01,109/-
Total expenditure to end of the year	...	Rs. 3,62,413/-

Completed in September 1929.

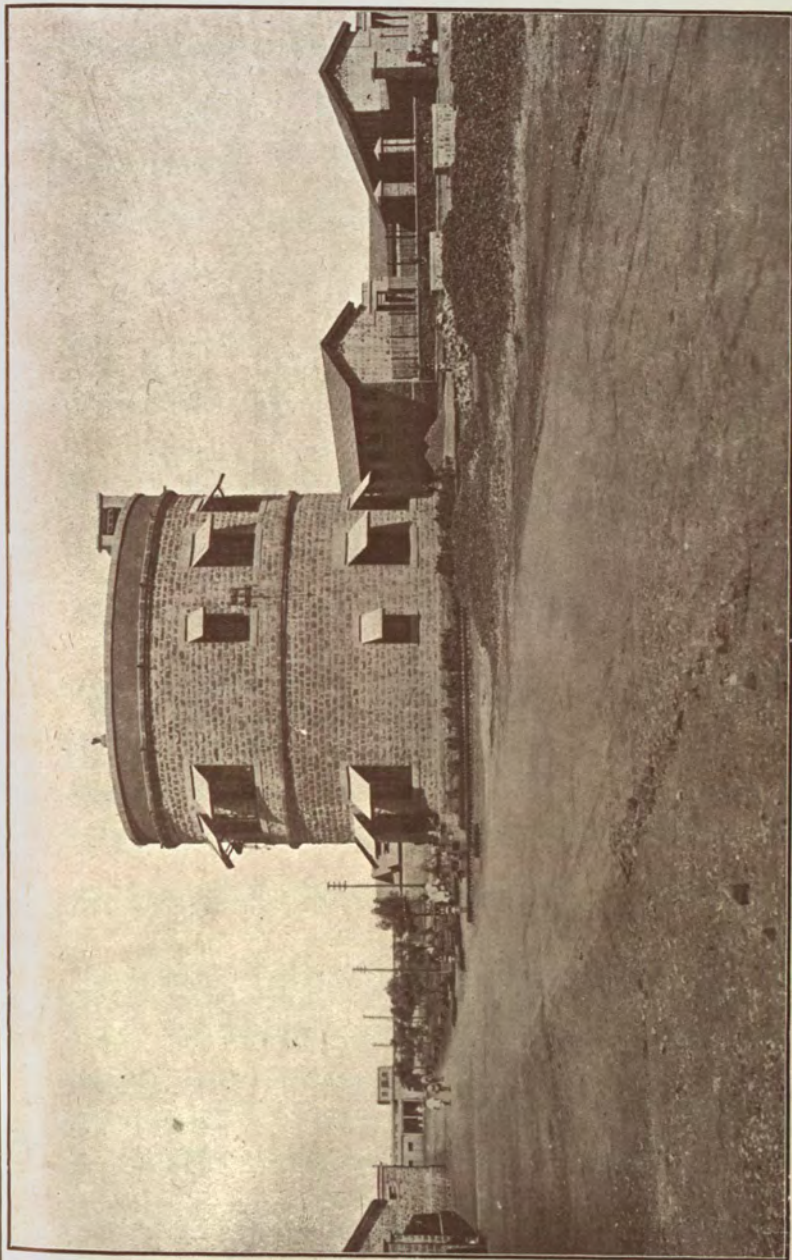




NASIK ROAD CENTRAL PRISON. OFFICE BLOCK AND MAIN ENTRANCE GATE—Front view

Date of photo	...	..	...	26th April 1930.
Date of commencement	..	..	...	16th April 1927.
Estimated cost	...	..	...	Rs. 85,870/-.
Total expenditure to end of the year	...	..	...	Rs. 75,962/-.

Completed in March 1928.



NASIK ROAD CENTRAL PRISON. CENTRAL WATCH TOWER AND LIBRARY—VIEW LOOKING TOWARDS
MAIN ENTRANCE

Date of Photo...	...	28th April 1930.
Date of commencement	...	10th January 1928.
Estimated cost ..	...	Rs. 17,169/-.
Total expenditure to end of the year...	...	Rs. 16,526/-.

Completed in December 1928

*General Administration—**(1) Residences for Heads of Provinces.*

No expenditure was incurred during the year.

(2) Provincial Legislative Councils.

					Rs.
On works	..	..	..	..	18,942
On repairs	..	..	..	..	18,040
Total	..				36,982

(3) Secretariat and Head Quarters Establishment including Local Fund Audit Establishment.

					Rs.
On works	..	..	..	..	56,011
On repairs	..	..	..	..	2,50,788
Total	..				3,06,799

(4) Commissioners and District Officers.

On works	..	..	..	..	3,04,475
On repairs	..	..	..	..	2,61,318
Total	..				5,65,793

The new Mamlatdar's Kacheri at Amalner in the East Khandesh Division was completed during the year and handed over to the Revenue Department.

Administration of Justice—

					Rs.
On works	..	..	..	..	2,67,138
On repairs	..	..	..	..	1,31,625
Total	..				3,98,763

The works of internal finishings, drainage and water service, subsidiary buildings, compound wall, roads, lawn, etc., in the compound of the Judicial Commissioner's Court at Karachi were completed.

Jails and Convict Settlements—

					Rs.
On works	..	..	..	..	2,02,382
On repairs	..	..	..	..	43,493
Total	..				2,45,875

The work of constructing additional $3\frac{1}{2}$ barracks in connection with the Jail buildings at Nasik was completed during the year and the work of constructing work-sheds was in progress.

<i>Police—</i>					Rs.
On works	..	..	..	..	1,93,580
On repairs	..	..	..	..	3,74,451
Total					5,68,031

<i>Scientific Departments—Museums—</i>					
On repairs	..	..	..	..	568

<i>Educational University—</i>					
On works	..	..	..	..	22,35,562*
On repairs	..	..	..	..	56,854†
Total					22,92,416

A building for Textile Department in the compound of the Victoria Jubilee Technical Institute at Matunga, Bombay, was in progress.

<i>Secondary—</i>					Rs.
On works	..	..	..	..	16,204‡
On repairs	..	..	..	..	28,632§
Total					44,836

<i>Primary—</i>					
On works	..	..	..	..	4,922
On repairs	..	..	..	..	4,693
Total					9,615

<i>Special—</i>					
On works	..	..	..	..	9,092¶
On repairs	..	..	..	..	19,049
Total					28,141

<i>Miscellaneous—</i>					
On works	..	..	..	..	5,064
On repairs	..	..	..	..	22,405
Total					27,469

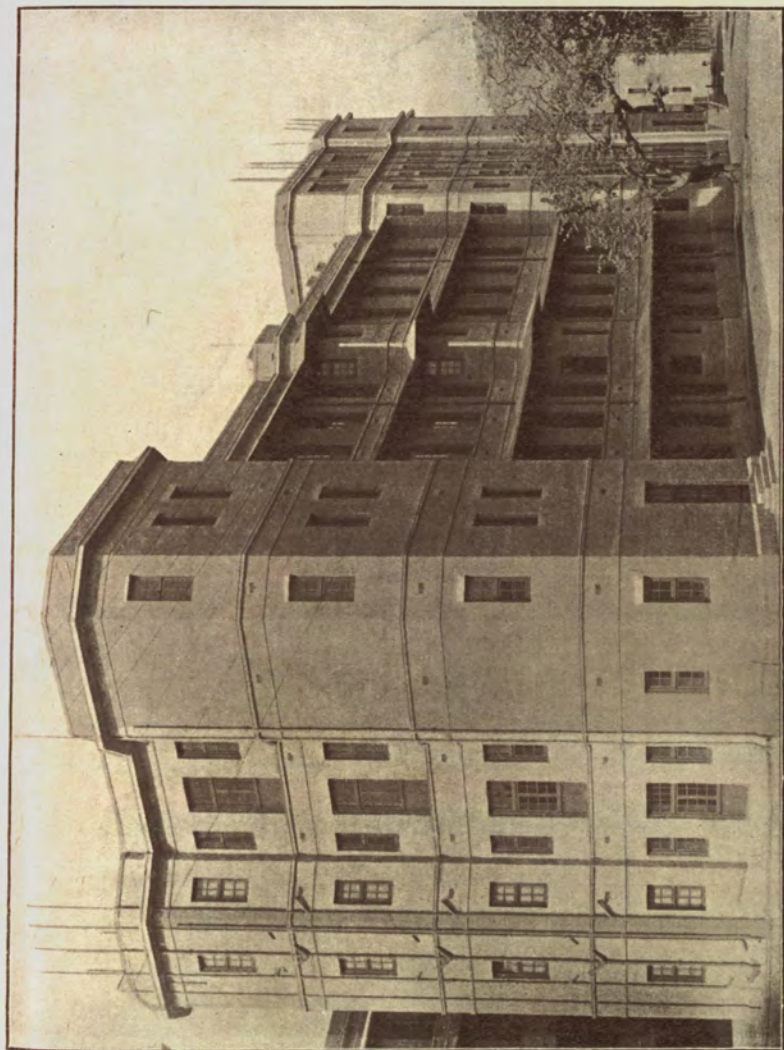
* Includes Rs. 36,158 spent from deposit contribution ordinary.

† Includes Rs. 4,745 spent from deposit contribution ordinary.

‡ Includes Rs. 9,091 from contribution ordinary.

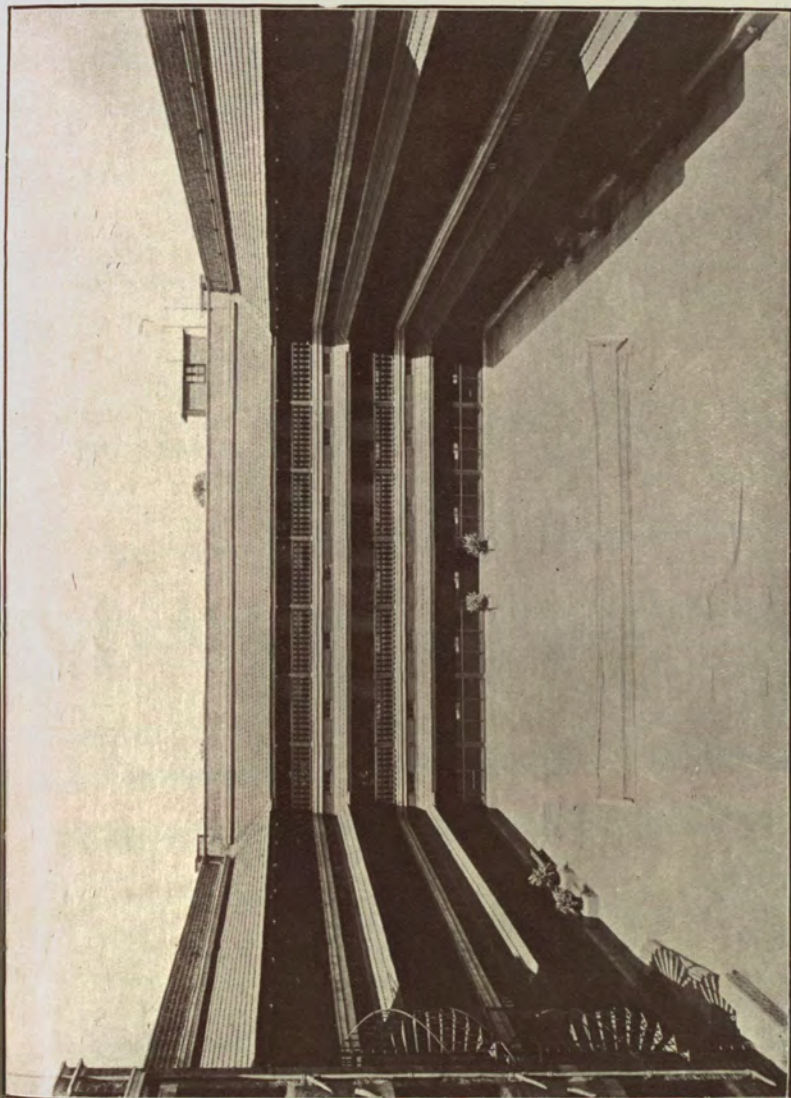
§ Includes Rs. 1,657 from contribution ordinary.

¶ Includes Rs. 5,042 from deposit contribution ordinary.



No. 1 WARD PAVILION (SASSOON DAVID HOSPITAL) AT THE SIR J. J. HOSPITAL, BOMBAY.

Date of Photo	...	April 1930.
Estimated cost of the building	...	Rs. 3,43,370
Total expenditure during the year	...	Rs. 2,74,718
Date of commencement	...	October 1928.
Date of completion	...	April 1930.



QUARTERS FOR 99 NURSES IN THE COMPOUND OF SIR J. J. HOSPITAL, BOMBAY.

Date of photo	...	April 1930
Estimated cost of the building	...	Rs. 3,50,300.
Total expenditure during the year	...	Rs. 2,93,755.
Date of commencement	...	April 1928.
Date of completion	...	December 1929.

Rs.

Medical—

On works	..	..	..	..	10,04,247*
On repairs	..	..	..	..	2,32,233
Total					12,36,480

Works completed—

No. 1 Ward Pavilion (Sassoon David Hospital) at the Sir J. J. Hospital, Bombay, Sir Currimbhoy Ebrahim Memorial Dental College and Hospital at the Sir J. J. Hospital, New building for Pathology and Bacteriology, Grant Medical College, additional quarters for 99 nurses and a Sisters' Dining and sitting Room in the compound of the Sir J. J. Hospital, Bombay, Laboratory at the B. J. Medical School, Poona.

Works in progress—

Sir C. J. Ophthalmic Hospital in the compound of the Sir J. J. Hospital and quarters for Medical officers, Staff and Servants at the Sir J. J. Hospital, Bombay. Two separate wards for Parsi patients at the Central Mental Hospital, Yeravda, and quarters for nurses and probationers, Sassoon Hospital, Poona.

Civil Works—

Rs.

On works	..	..	..	..	1,44,031
On repairs	..	..	..	..	2,51,957
Total					3,95,988

Public Health—

On works	..	..	..	..	78,586
On repairs	..	..	..	..	45,227
Total					1,23,813

Agriculture—

On works	..	..	..	..	56,021†
On repairs	..	..	..	..	33,075
Total					89,096

Stationery and Printing—

On works	..	..	..	..	1,172
On repairs	..	..	..	..	13,862
Total					15,034

* Includes Rs. 3,99,021 from Deposit contribution ordinary.

† Includes Rs. 28,902 from Deposit contribution ordinary.

Miscellaneous Departments—

	Rs.
On works	57,377
On repairs	49,704
To ^a al ..	1,07,081

Industries—

On works	6,408
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Central Workshops, Dapuri.

During the year the total value of the work done at the Workshops was only Rs. 1,51,150 as against Rs. 1,89,507 for the previous year due to slackness in trade and financial stringency. After paying all charges including Rs. 18,124 as interest on the capital value of the Workshops and the Dapuri Estate the working loss was Rs. 55,420 against the loss of Rs. 39,476 during the previous year.

Two non-return valves for outfall sewer, 10 C. I. water ballast rollers, 2 circular penstock gates for sewage, steel roof trusses, circular manhole frames and covers, compressed air receiver, warning and speed signs, observation tubes, jail cells and doors and cast brass tablet were made during the year. Repairs were carried out to the Worthington pumps at Karad Water Works and to the pumping engine of Pandharpur water works and to all makes of water meters.

A number of Boring Bits and Auger stems and Impellers for Turbine pumps and a Power Hoist were ordered by the Agricultural Department. Repairs and renewals of steam road roller parts belonging to the Agricultural Department were also carried out. A large amount of castings, including special pipes from 4" to 24" diameter, manhole covers and frames, Meter and Hydrant boxes, etc., were made for the Public Health Circle.

During the year 24 apprentices were under training, 5 completed their apprenticeship and 8 new apprentices were engaged.

The works were honoured by a visit from His Excellency the Governor of Bombay accompanied by the Honourable Member, General Department, the Honourable Minister, Local Self Government and the Secretary and Joint Secretary to Government, Public Works Department.

B—ARCHITECTURAL.

During the year under review the activity in design noted in the previous year's Administration Report was maintained.

Designs and sketch plans were made for several buildings in connection with the Bombay City Police Club House, the Post Office at Byculla, Bombay, the Customs Preventive Officers' Club and new Post Office at Matunga, Bombay, the New Administrative Offices and extension to the Central Offices at Poona, the Post Office at Ahmedabad and the Post and Telegraph Offices at Belgaum and at Sukkur.

In regard to public and institutional buildings, designs were prepared for several works in connection with the J. J. Hospital Reconstruction Scheme, Bombay, the Ismail College at Andheri, Thana Division, the Civil Hospital at Thana, the Hostel for 120 students of the Agricultural College, Poona, the District Local Board offices at Broach and the Civil Hospital at Shikarpur.

A standard plan was prepared for Nurses' quarters.

C—ELECTRICAL.

(1) *Electric Licenses.*

Electricity has continued to attract the attention of the public in an interesting degree. This great public amenity has come to be looked upon as a necessity and not as a luxury and its provision in the Bombay Presidency is already on a far larger scale than in the case of any other Province in India. Six new licenses including permissions under section 28 of the Indian Electricity Act were granted in the year under report for the supply of electricity to Larkana, Matheran, Pandharpur, Panchgani, Panvel and the Mulji Jetha Cloth Market in Bombay. Several more applications were under the consideration of Government. The number of licenses including permissions under section 28 of the Indian Electricity Act in operation at the beginning of the year under report was 32 while at the end of the year the number operating or under consideration was 46.

(2) *Electric Works.*

Under this head the expenditure incurred was as follows:—

	Rs.
On works	1,33,903
On repairs	1,56,582
Total ..	2,90,485

The following important works were either in progress or completed during the year:—

Electric installations were provided at No. 1 Ward Pavilion and the Sir Currimbhoy Ebrahim Memorial Dental College and Hospital at the Sir J. J. Hospital Reconstruction Scheme, Bombay, the Preventive Officers' quarters at Matunga and the Nurses' quarters in the compound of Sir J. J. Hospital, Bombay, the Nasik Road Central Prison, Nasik, the Circuit House and the Revenue and Judicial offices at Hyderabad (Sind), the Civil Aerodrome at Drigh Road and the Judicial Court buildings, Artillery Maidan, Karachi.

D—COMMUNICATIONS.

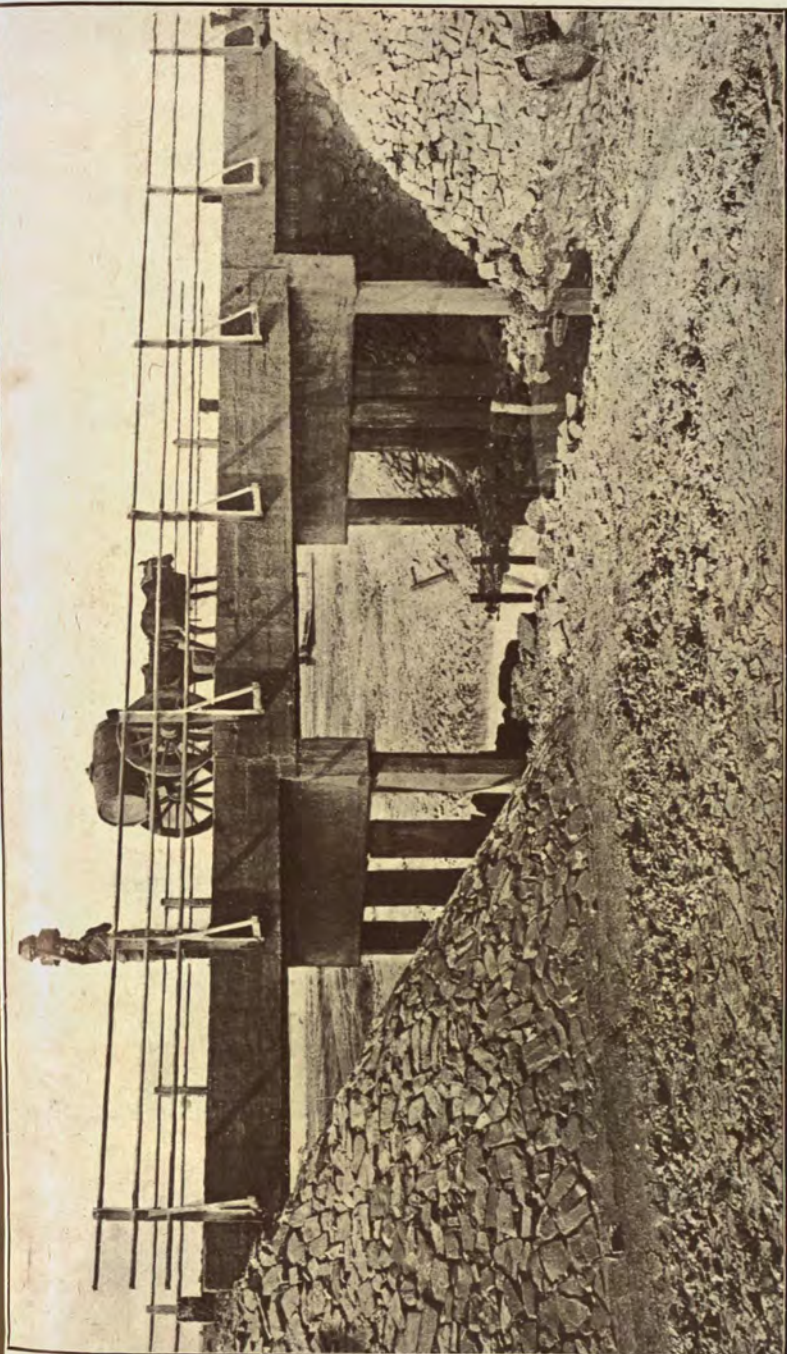
	Rs.
On works	13,38,051
On repairs	36,05,452
Total ..	49,43,503

The principal works completed or nearly so during the year were :—

Bridge across the Murdha Creek on the Bhaynder-Uttan Road.	} Thana Division.
Reconstruction bridge No. 25 in mile 12 of the Kim-Mandvi Road.	} Surat and Broach Division.
Protecting the first mile of the Kaira-Mehmedabad Road by constructing groynes in the Watrak river at Kaira.	} Kaira and Panch Mahals Division.
Causeway over the Malaprabha river at Govankop on the Hubli-Sholapur Road.	} Dharwar Division.
Improvements to the Kumta-Hubli Road	.. Kanara Division.
Bridge over the Bav river and the Saptalingi river on the Hatkhamba-Poladpur Road.	} Ratnagiri Division.

The principal works still in progress during the year were :—

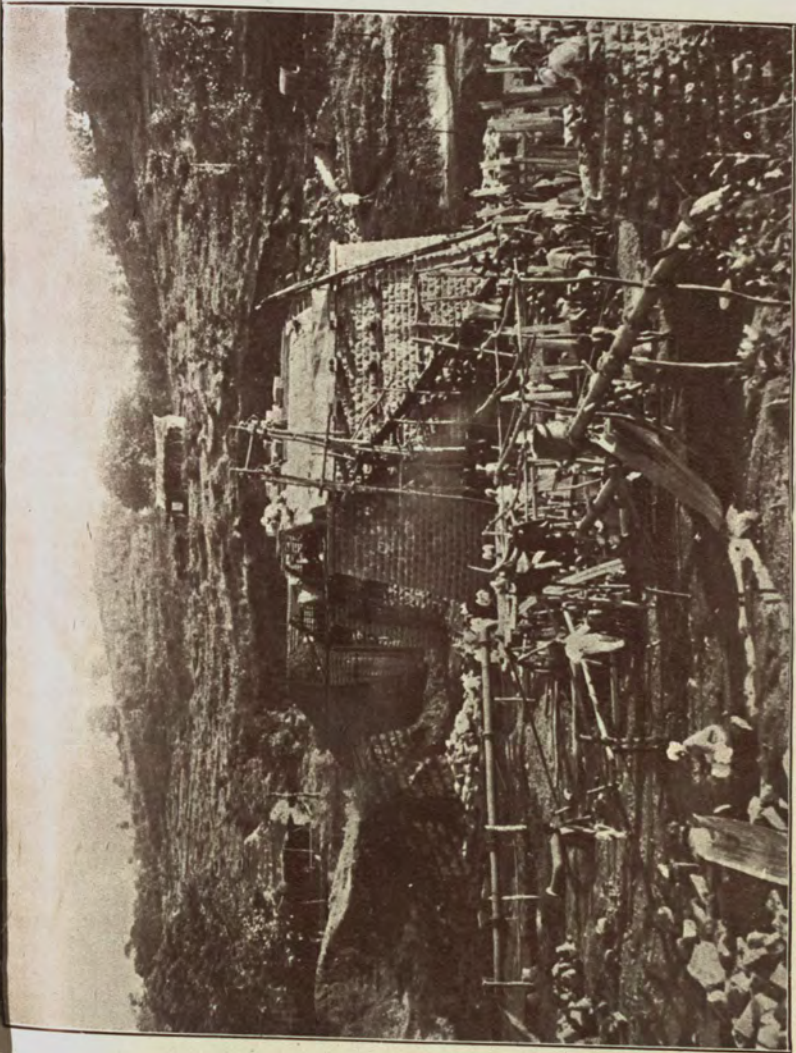
Low level masonry bridge over the Kamvari river on the Bhivandi-Vada Road.	} Thana Division.
Metalling and improving the Ahmedabad-Barwala Road, section I, from Sarkhej to Bavla.	} Ahmedabad Division.
Improvements to Bombay-Poona, Poona-Ahmednagar, Indapur to Sarati via Bavda, Hadapsar-Nira Bridge and Junnar-Narayangaon Roads and diversion of a portion of Kennedy Road at Poona.	} Poona Division.
Asphalt spraying over the roads in Mahableshwar.	} Head Quarters Works Division.
Improvements to Poona-Nagar Road and resurfacing and asphaltting Ahmednagar Station Road.	} Ahmednagar Division.
Improvements to Khandesh Nizam's Frontier, Nasik to Nasik Railway Station and Nasik-Deolali Roads.	} Nasik Division.
Extension of Dhulia-Bhusawal Road to Nimar and Berar Frontiers and to Chalisgaon-Edlabad Road, Part II.	} East Khandesh Division.
Extension of the Chalisgaon-Outramghat Road to H. E. H. the Nizam's territory.	
Causeway across the river Girna near Jalgaon on Dhulia-Bhusawal Road.	
Improvements to Dhulia-Bhusawal and Dhulia-Chinchpada Roads.	
Constructing Warsa-Borzar Road, section I, and Dhadgaon-Shahada Road, section IV.	} West Khandesh Division.
Bridge over the river Tapti at Gidhad site on the Bombay-Agra Road.	



REINFORCED CEMENT BRIDGE OVER THE MURDHA CREEK AT RAI, THANA DIVISION.

Date of photo	...	28th May 1930.
Date of commencement	...	21st March 1928.
Estimated cost	...	Rs. 29,707/-.
Total expenditure to end of the year	...	Rs. 29,008/-.

Completed on 31st August 1929.

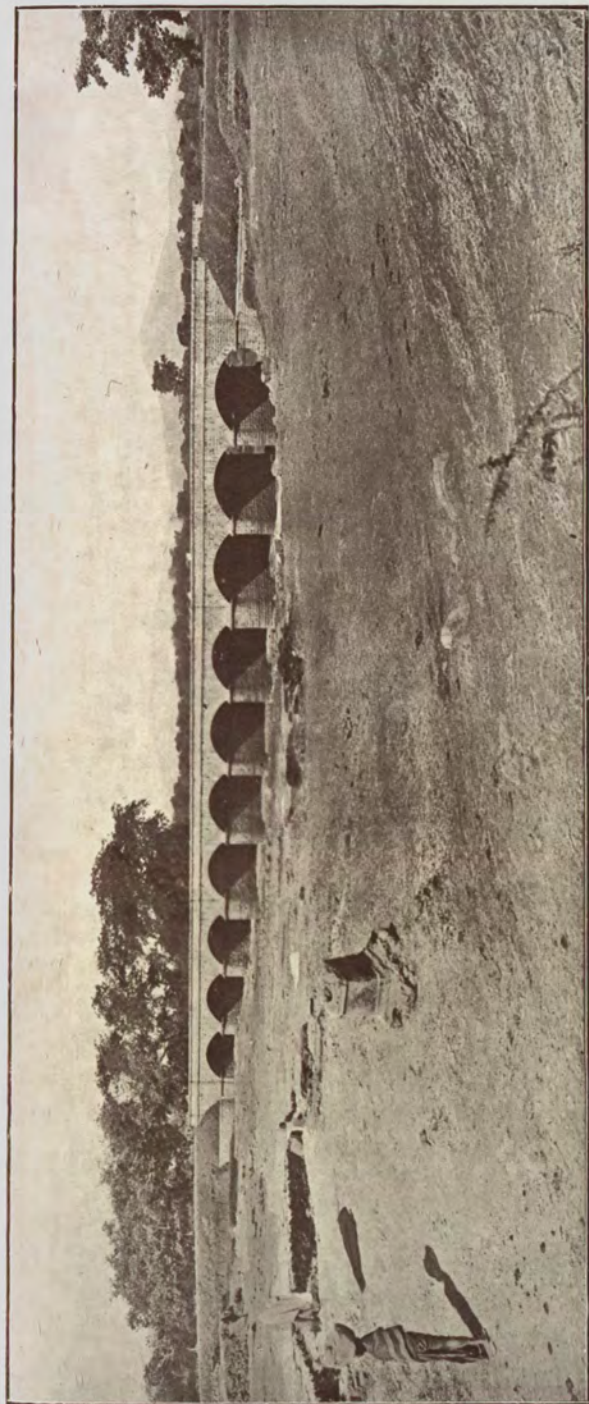


BRIDGE OVER THE SAPTALINGI RIVER IN MILE No. 10 OF THE HATKHAMBA
POLADPUR ROAD

Upstream view.

Date of photo	...	26th December 1929.
Estimated cost	...	Rs. 98,437.
Expenditure to date	...	Rs. 94,465.

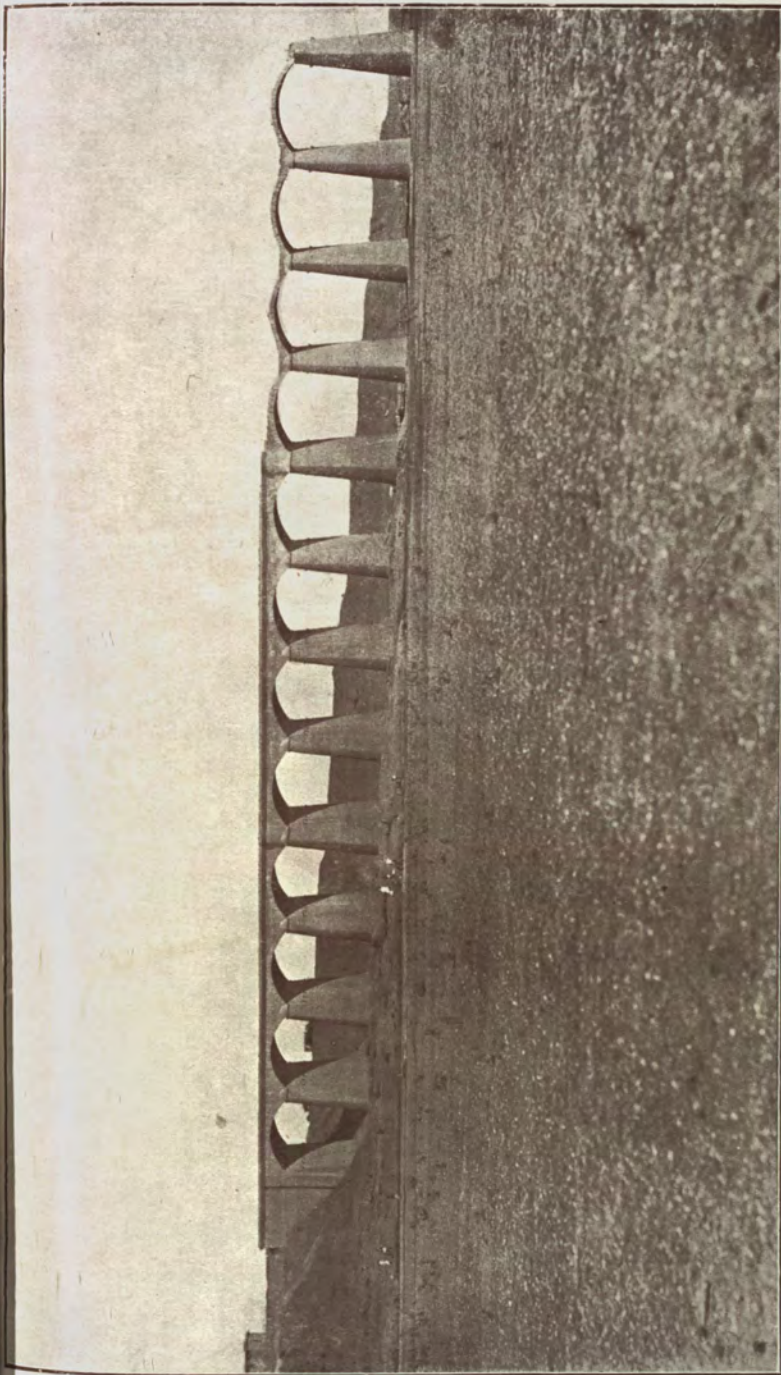
The work is practically completed.



MASONRY BRIDGE OVER THE KAMVARI RIVER IN MILE 0/4 OF BHIVANDI VADA ROAD. THANA DIVISION.

Date of photo	...	6th June 1930.
Date of commencement	...	15th November 1928.
Estimated cost	...	Rs. 43,423/-.
Total expenditure to end of the year	...	Rs. 37,598/-.

Work in progress.



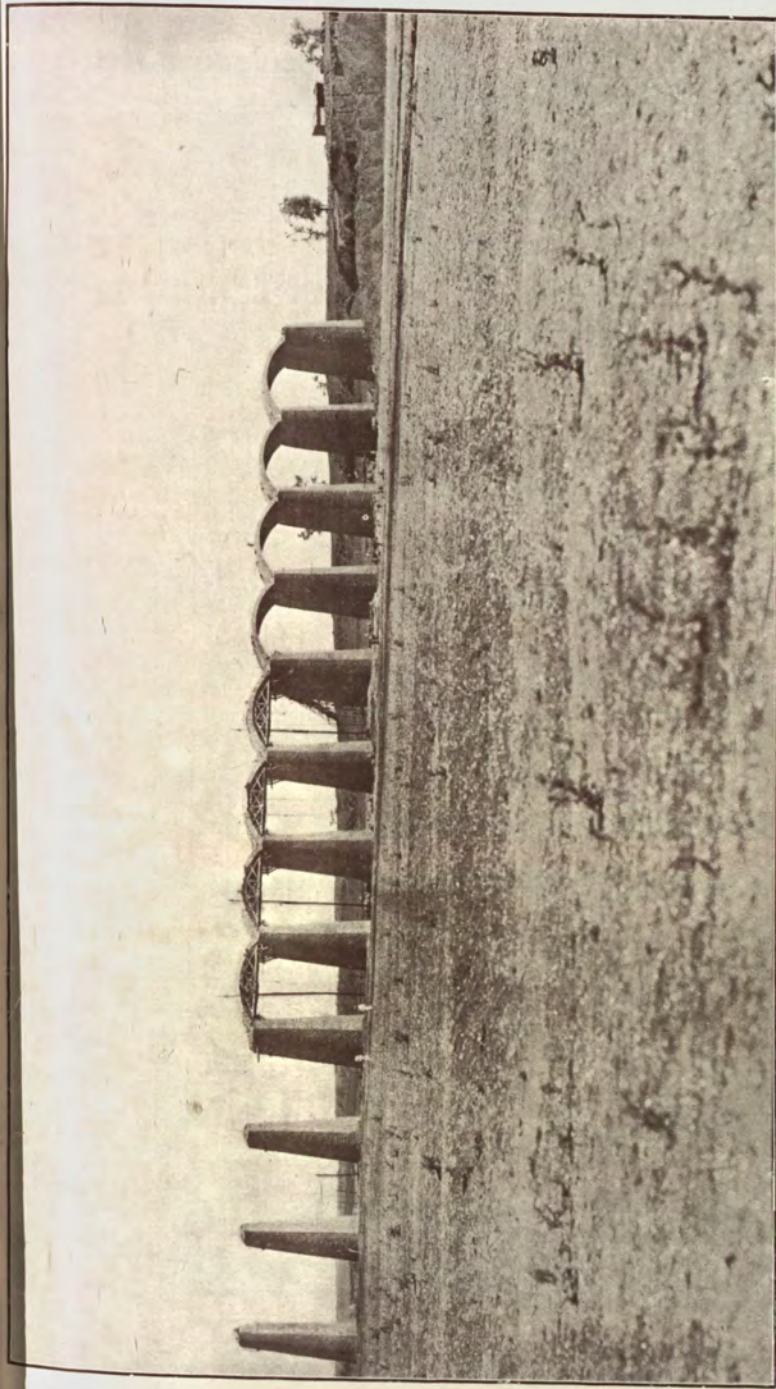
BRIDGE OVER THE RIVER TAPTI AT GIDHAD SITE ON THE BOMBAY AGRA ROAD.

MAIN BRIDGE.

View from up-stream side.

Date of photograph	...	1st May 1930.
Date of commencement of work	...	January 1926.
Estimated cost of work	...	Rs. 15,59,419.
Total expenditure to 31st March 1930	...	Rs. 10,43,078.

Work in progress.



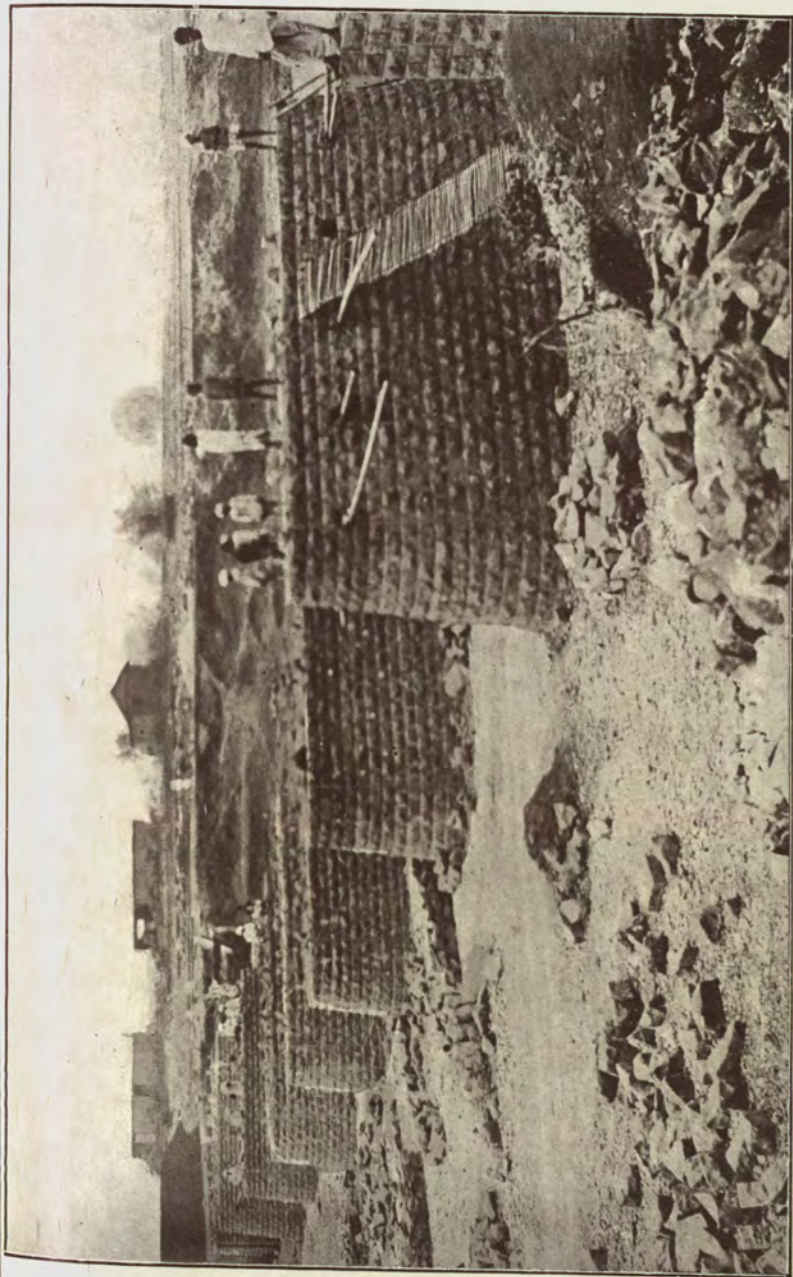
BRIDGE OVER THE RIVER TAPTI AT GIDHAD SITE ON THE BOMBAY AGRA ROAD.

MAIN BRIDGE.

View from up-stream side.

Date of photograph	...	1st May 1930.
Date of commencement of work	...	January 1926.
Estimated cost of work	...	Rs. 15,59,449.
Total expenditure to 31st March 1930	...	Rs. 10,43,078.

Work in progress.

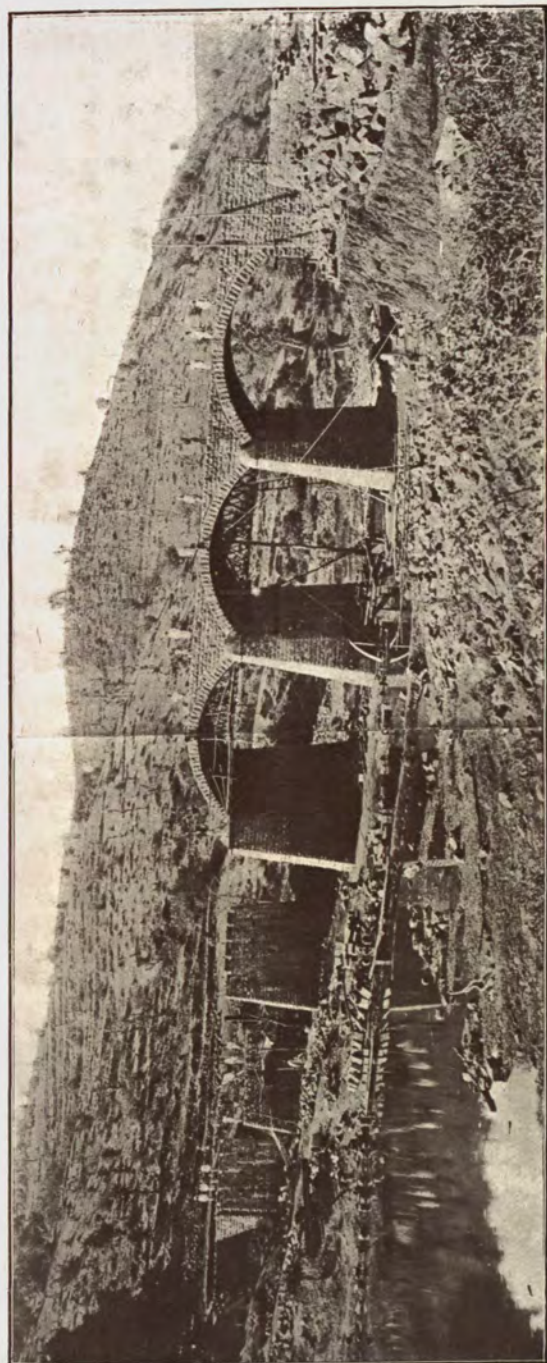


BRIDGE OVER THE GAD RIVER IN MILE No. 33 OF THE HATKHAMBA POLADPUR ROAD NEAR ARAVLI.

Downstream view.

Date of Photo	...	7th May 1930.
Estimated cost	...	Rs. 1,11,718.
Expenditure to date...	...	Rs. 12,772.
Date commencement	...	February 1930.

The work is in progress.



BRIDGE OVER THE KAJVI RIVER AT ANJANARI IN MILE No. 5 OF THE PALI PHONDA ROAD.

Upstream View.

Date of photo	...	31st March 1930.
Estimated cost	...	Rs. 1,36,280/-.
Expenditure to date	...	Rs. 88,370.
Date of commencement	...	October 1928.

The work is in progress.

Road from Taloda to Shahada, section I, from Taloda to Prakash and section II from Prakash to Shahada.	} West Khan- desh Division.
Improvements to Sadashivgad-Kadra, Sirsi-Kodkini and Khanapur-Yellapur Roads.	} Kanara Divi- sion.
Bridges over the rivers Jagbudi and Gad on the Hatkhamba-Poladpur Road.	} Ratnagiri Division.
Bridges over the rivers Kajvi at Anjanari and Muchkundi at Waked on the Pali-Phonda Road.	
Bridge over the Savitri river on the Dharamtar-Mahableshwar Road.	
Improvements to Sukkur-Shikarpur Road	} Shikarpur Canals Divi- sion.
Improvements to Hala-Shahdadpur and Mirpurkhas-Mirwah-Gorchani Roads.	} Hyde r a b a d Canals Divi- sion.

Arboriculture.

Nurseries were maintained at various places and planting, watering and protection of road side trees continued to receive careful attention.

About 20,104 trees were planted during the year along Provincial and Local Fund roads in charge of this Department.

E—MISCELLANEOUS.

					Rs.
On works	..	..	..	..	9,39,940*
On repairs	..	..	..	..	61,488†
Total ..					10,01,428

Public Health, Water Supply, Drainage and Boring Works.

During the year designs and specifications were prepared for pumping plants at Sholapur, Shingnapur and Alandi. The pumping machinery at the Bahiroba Pumping Station was erected during the year. New pumping plants were installed and trial tests were carried out for water works at Pandharpur, Jalgaon and Jamkhandi. The water works pumping machinery at Karad, Matheran, Uran, Dharwar Police Lines, Kapadvanj and Nasik City were inspected. Periodical records of the fuel consumption and of the work done by the Municipal pumping machinery at several towns were called for and scrutinised with a view to economy. About 51 road rollers and 10 portable engines were inspected at various places and the reports made as to the necessary repairs to them.

* Includes Rs. 9,28,756 from Deposits.

† Includes Rs. 29,312 from Deposits.

Improvements to the water supplies at Alandi, Nasik Road Central Prison, Jacobabad, Hyderabad, Gidu, Transfuleli, Karachi, Ahmedabad, Surat, Jalgaon, Nandurbar, Sholapur, Shingnapur, Lonavla and Nipani were in progress and those at Dholka and Kapadvanj were nearly completed.

Drainage works at Poona, Nasik Road Central Prison, Tando Adam, Kapadvanj, Dhulia, Sholapur, Gadag Bettigeri and Belgaum were in progress.

Boring operations for water supply at Asalgaon, Chaloda, Bavla, Broach and Aden were in progress.

F—TECHNICAL PAPERS.

The following six Public Works Department Technical Papers were issued during the year :—

27. Report on experiments on model culverts made with Hume Pipes, by C. G. Hawes, M.C., B.Sc. (Lon.), A.C.G.I., A.M.Inst.C.E., Executive Engineer, Central Designs Division, and H. S. Kahai, Assistant Engineer, with appendix containing a note on the use of Hume Pipes for Irrigation purposes, based on notes by C. C. Inglis, B.A.I., M.Inst.C.E., Superintending Engineer, Irrigation Development and Research Circle.

28. Note on "Research work done by the Special Irrigation Division since its formation in June 1916," by C. C. Inglis, B.A., B.A.I., M.Inst.C.E., Superintending Engineer, Irrigation Development and Research Circle.

29. Note on "Experiments carried out with various designs of piers and sills in connection with the Lloyd Barrage at Sukkur," by C. C. Inglis, B.A.I., M.Inst.C.E., Superintending Engineer, Irrigation Development and Research Circle, and C. G. Hawes, M.C., B.Sc., A.M.Inst.C.E., Executive Engineer, Central Designs Division, with J. S. Reid, B.Sc., Assistant Executive Engineer, D. J. Joglekar, B.E., Assistant Engineer, and H. V. Katakhar, B.E., Temporary Engineer.

30. A note on "A Critical study of Runoff and floods of catchments of the Bombay Presidency with a short note on losses from lakes by evaporation," by C. C. Inglis, B.A.I., M.Inst.C.E., Superintending Engineer, Irrigation Development and Research Circle, with A. J. DeSouza, B.E., Assistant Engineer.

31. Report on Experiments carried out at the Karachi Model Testing Station on a Model of a Flumed Regulator by C. G. Hawes, M.C., B.Sc. (Lond.), A.M.Inst.C.E., Executive Engineer, Central Designs Division, and H. S. Kahai, Assistant Engineer, with a note by W. A. Evershed, B.Sc. (Lond.), A.M.Inst.C.E., Superintending Engineer, Irrigation Development and Research Circle.

32. Note on experiment on a model of the Bifurcation on the North Western Perennial Canal at the head of the Warah Branch by C. G. Hawes, M.C., B.Sc. (Lond.), A.C.G.I., A.M.Inst.C.E., Executive Engineer, Central Designs Division, and H. S. Kahai, Assistant Engineer.



NANDURBAR WATER SUPPLY. PICK-UP-WEIR AT TOKARTOLA.

View of Foundation Concrete.

Date of Photograph	...	17th April 1930.
Date of commencement	...	1st October 1929,
Estimated cost	...	Rs. 23,500.
Total expenditure to end of year...	...	Rs. 6209-14-6.

Work in progress.

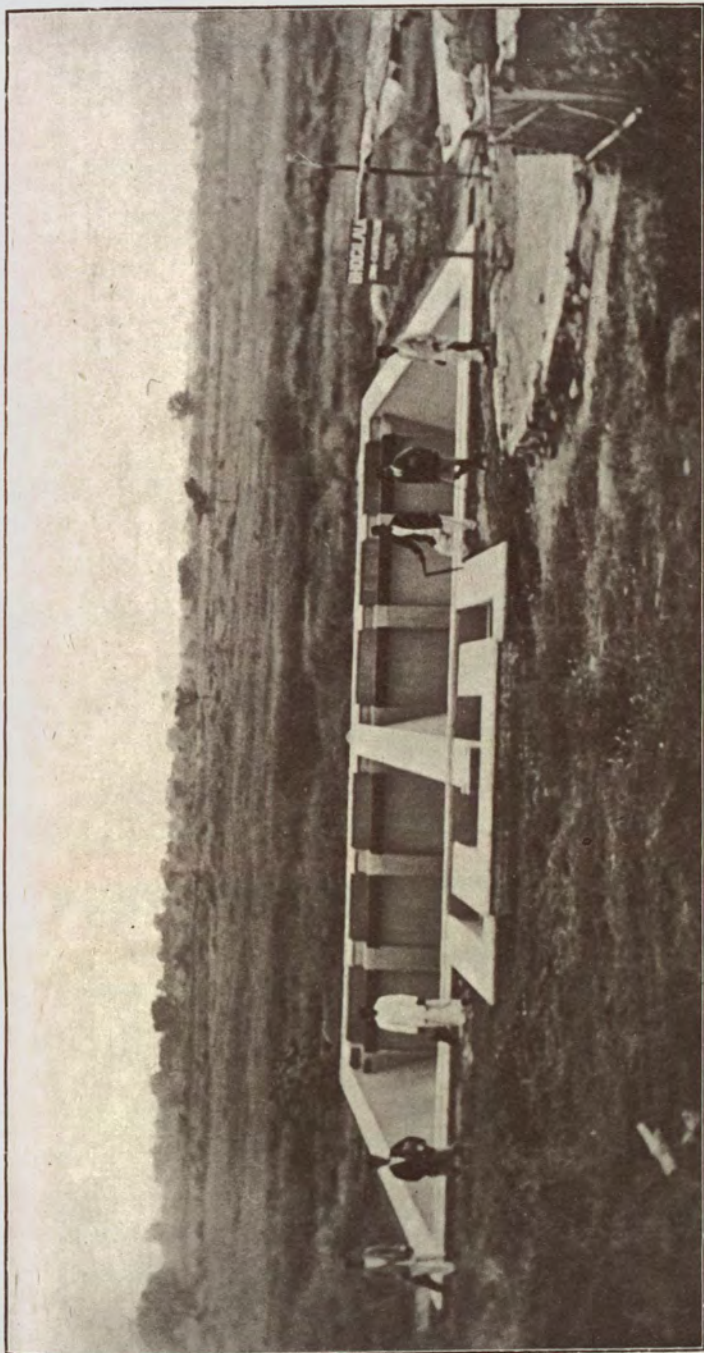


G. P. Z. P. 1931

GADAG BETTICERI DRAINAGE.

General View of Jawali Nala Drain and Drain No. 19.

Date of Photo	...	17th August 1923.
Date of commencement...	...	March 1928.
Estimated cost	...	Rs. 4,366/-.
Total Expenditure	...	Rs. 4,077/-.
Work completed	...	June 1929.



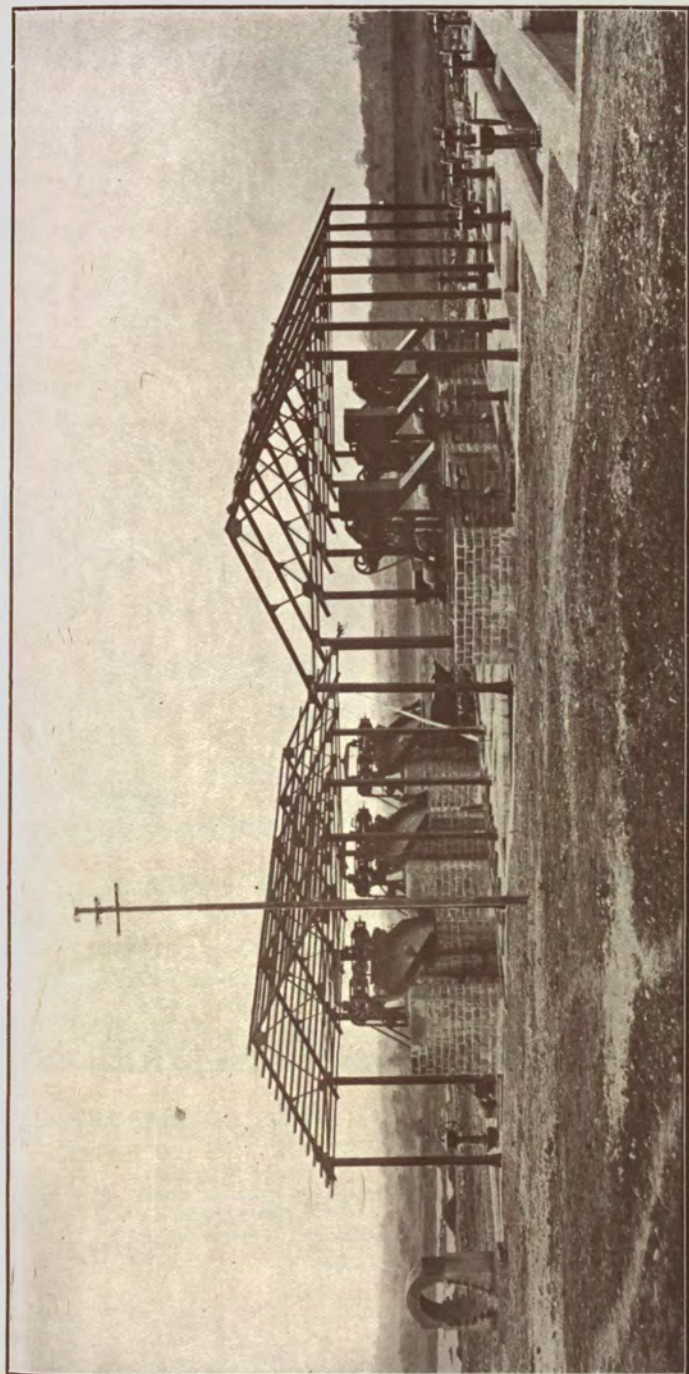
G. P. Z. P. 1931

KAPADWANJ WATER SUPPLY AND DRAINAGE.

General view of settling tank and Sewage Farm.

Date of Photo ...	...	10th October 1929.
Date of commencement ...	...	7th May 1929.
Estimated cost ...	...	Rs. 8,450/-.
Total expenditure to end of the year ...	...	Rs. 6,000/-.

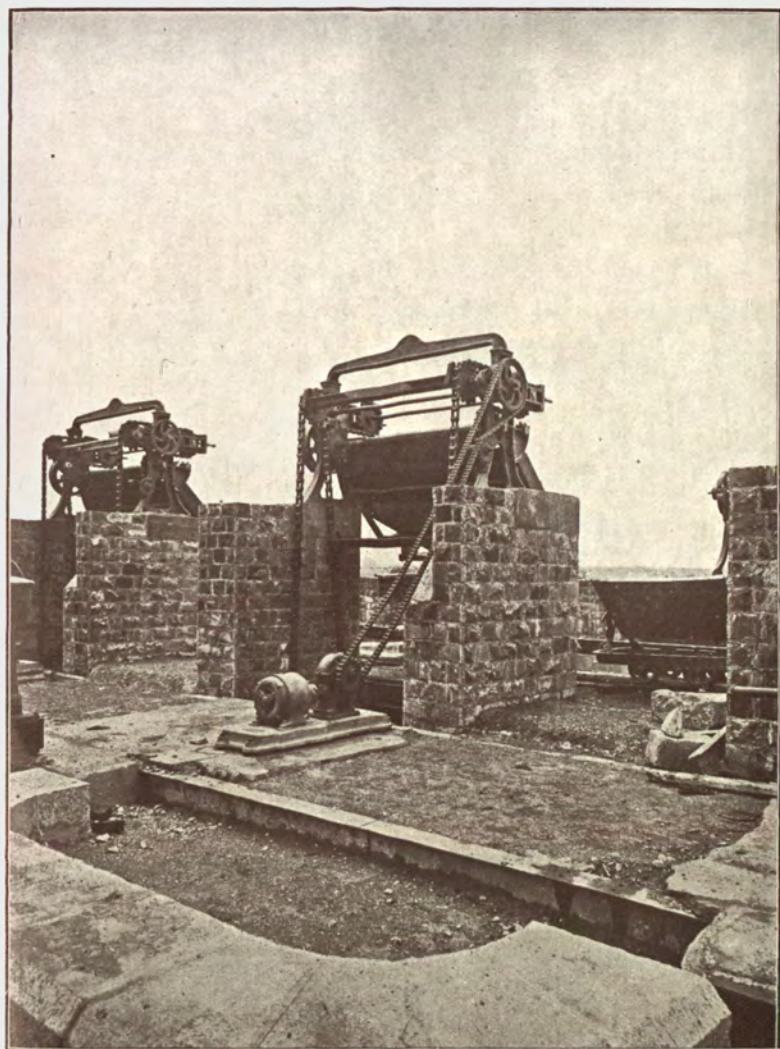
Work in progress.



POONA DRAINAGE. SCREEN AND GRIT ELEVATOR HOUSES.—Combined view.

Date of Photograph	...	25th July 1929.
Date of commencement	...	19th July 1929.
Estimated Cost	...	Rs. 22,221/-.
Total expenditure to end of year	...	Rs. 13,858/-.

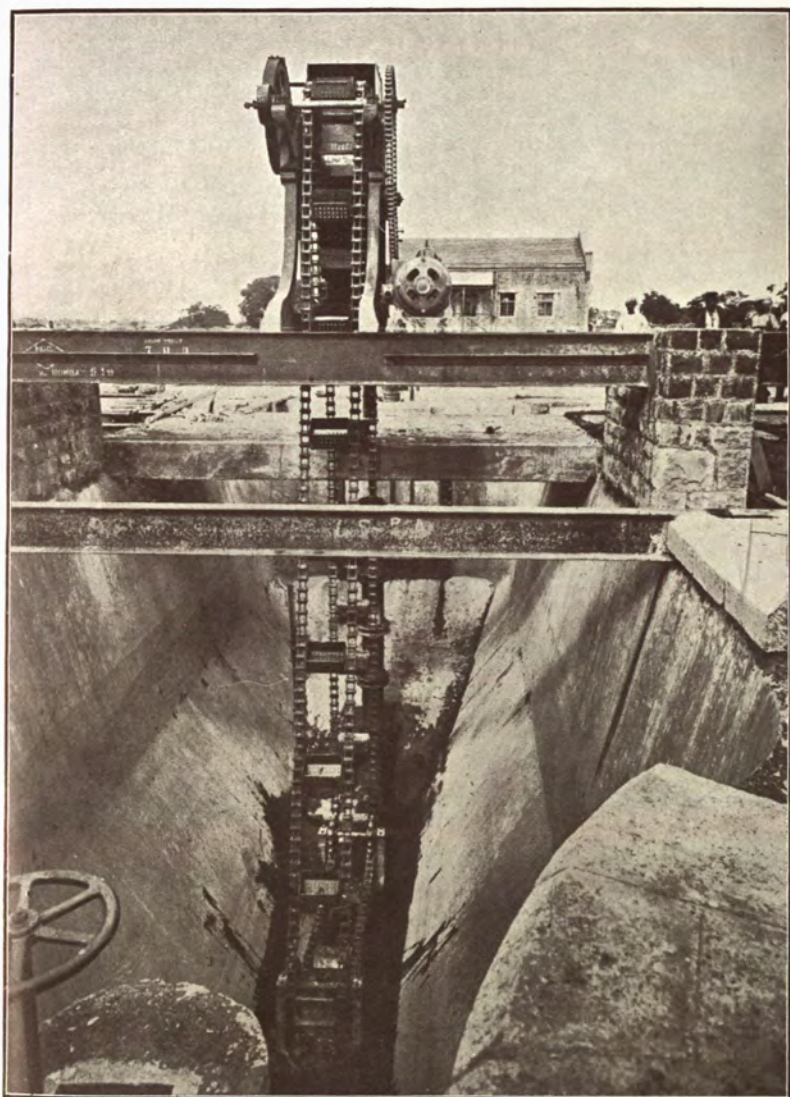
Work completed.



POONA DRAINAGE. SCREEN AND GRIT ELEVATOR MACHINERY.
RAKING APPARATUS—Rear View.

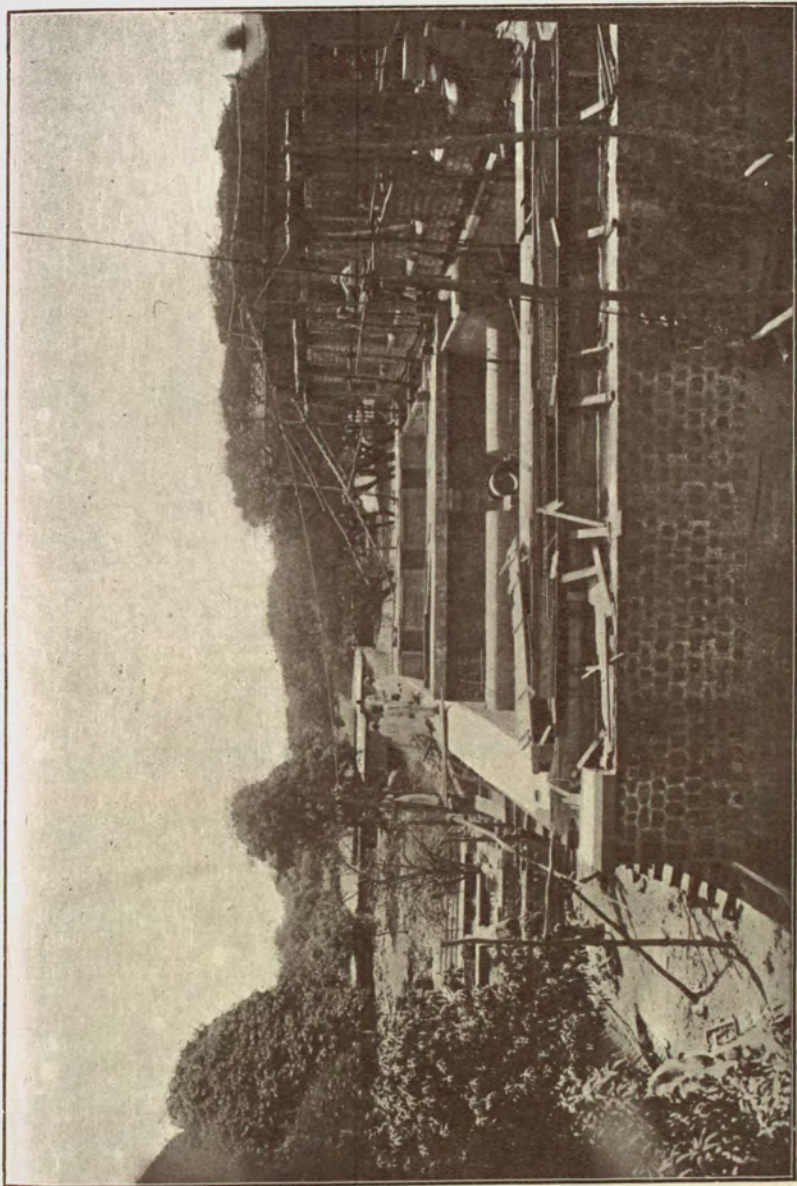
Date of Photograph	...	...	25th July 1929.
Date of commencement	...	...	9th April 1929.
Estimated cost	...	...	Rs. 74,480/-.
Total expenditure to end of the year...	...	...	Rs. 44,201/-.

Work completed.



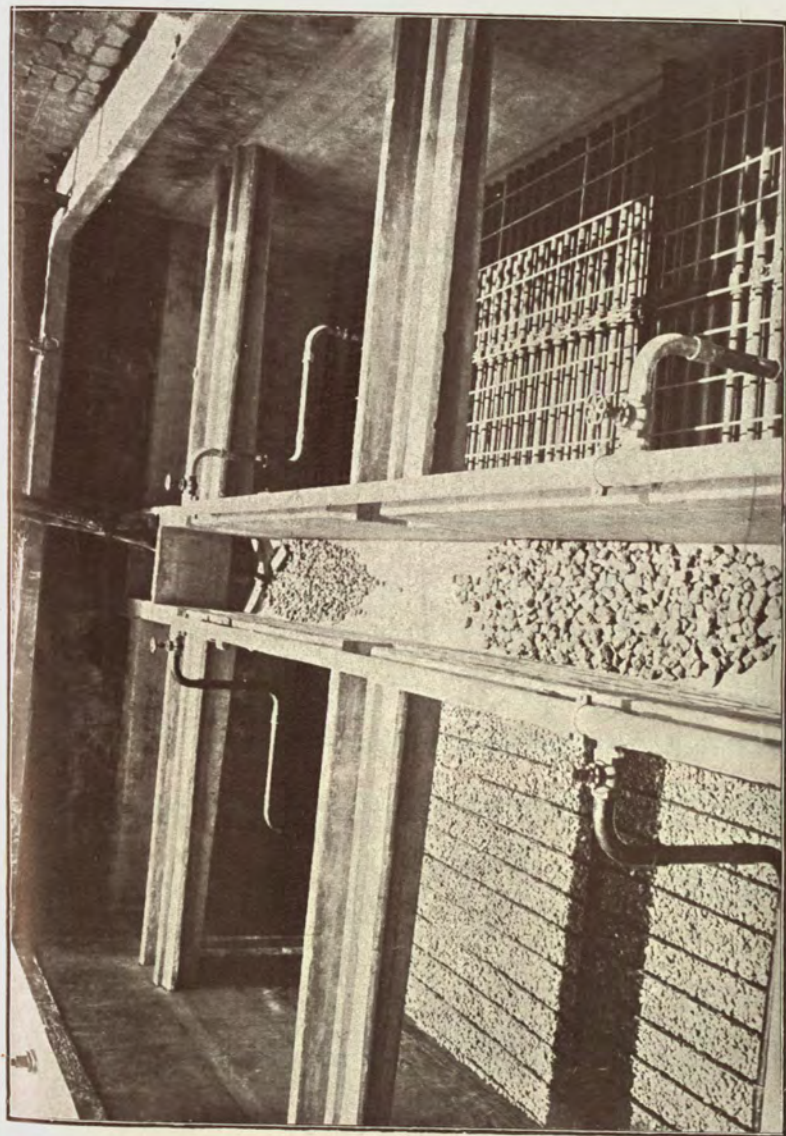
POONA DRAINAGE. GRIT ELEVATORS WITH DECANTING PIPE.

Date of Photograph	...	25th July 1929.
Date of commencement	...	9th April 1930.
Estimated cost	...	Rs. 74,480/-.
Total expenditure to end of year...	Rs. 44,201/-.	
Work completed.		



G. P. Z. P. 1931

POONA CANTONMENT WATER SUPPLY.
Coagulating Tank

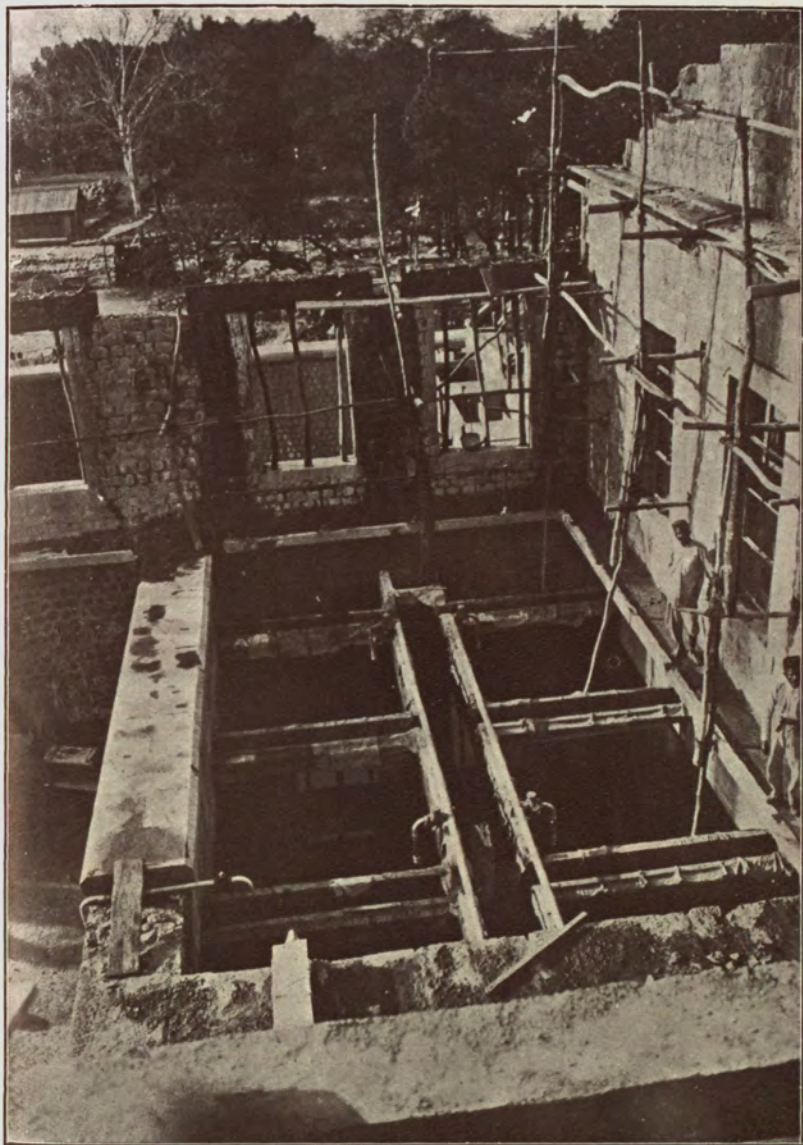


Bed without sand.

FILTER BED.

Sand being filled.

G. P. Z. P. 1931.



POONA CANTONMENT WATER SUPPLY.
Reinforced Cement Concrete Waste Trough.



POONA CANTONMENT WATER SUPPLY.
R. C. C. Inspection Box with Glazed Tiles.

G P Z P, 1931

G—RAILWAYS.

The Railway lines in the Bombay Presidency are not administered by the Bombay Government but are under the direct control of the Railway Board. The Railway Board has also the control of the Railway lines in the Indian States within the Presidency.

2. The total length of the Railways open for traffic during the year under report in the Bombay Presidency including Sind was 5735·892 miles including the following lines, aggregating 46·302 miles, newly opened for traffic :—

	Length.	Gauge.
(1) Boriavi-Vadtal Railway	3·712	5'-6"
(2) Jambusar-Kavi Railway	17·87	2'-6"
(3) Samni-Dehej Railway	24·72	2'-6"

3. All the works on the Vasad Katana Railway were nearing completion during the year under report and the line was actually opened for traffic with effect from 1st September 1930.

The Pad Idan-Mehrabpur Section (north loop)—44 miles—of the Sind Left Bank Feeder Railways, the construction of which was started in November 1928, was opened for traffic on 20th May 1930. The work on the Tando Adam Nawabshah Section (south loop)—54 miles—was started in March 1930 and is expected to be completed and the line opened to public traffic in November 1931.

The work on the Belapur-Sheogaon Railway has been suspended for want of funds.

4. Surveys on the following lines were completed or in progress :—

(1) Traffic survey of the Sojitra-Dholka Railway.

(2) The conversion from the metre gauge to broad gauge of the British section of the Jodhpur Railway from Hyderabad to Chhor and of the two branches from Mirpurkhas to Khadro and Jamrao to Jhudo.

(3) Lines in the Tando Mahommad Khan area including Tando Mahommad Khan-Sujawal and Badin-Jungshahi *via* Sujawal Railway Projects.

(4) Pandharpur-Lonand extension.

H—REPORT ON THE SCHEMES OF THE LATE DEVELOPMENT DEPARTMENT TRANSFERRED TO THE CONTROL OF THE PUBLIC WORKS DEPARTMENT.

I. Back Bay Reclamation Scheme.

1. The Back Bay Reclamation Scheme as sanctioned contemplated the reclamation from Back Bay at Bombay of about 1,149 acres of land. Some small alterations were made in the alignment of the seawall, and as the result of more accurate surveys, it was found that the area to be reclaimed amounted to 1,099 acres. In 1927 it was decided to curtail the scope of the scheme, and at present to proceed with the reclamation of blocks 1, 2, 7 and 8 only, together with such reclamation as is necessary for the construction of a connecting road between blocks 2 and 7. The areas of the curtailed scheme are :—

Block 1	73 acres.
Block 2	78 acres.
Block 7	135 acres.
Block 8	245 acres.

Of these, block 8 except for a 100 feet strip reserved for the marine drive along the seawall, has been sold to the Government of India for Military purposes. The remaining three blocks will be developed, partly for building purposes and partly for open spaces for recreation, etc. The actual reclamation of these areas was to be done by means of material dredged either from the bottom of the harbour or from the bed of Back Bay itself, and then this dredged material was to be covered with earth brought in by train.

By the beginning of the year under review, i.e., by April 1929, the dredging operations from the harbour into blocks 7 and 8 had been completed and also those from Back Bay into blocks 1 and 2. The office of the Dredging Section, which up to then had been under a Deputy Chief Engineer, was therefore closed down and the staff in that Section disbanded. The Deputy Chief Engineer left at the beginning of May 1929, and the Dredging Master and the last remaining Engineer at the end of July 1929. The dredgers and all the plant connected with them were then handed over to the Executive Engineer, Marine Lines, Colaba and Quarry Section, for custody and maintenance. This Marine Lines, Colaba and Quarry Section, which was a combination of the original three Deputy Chief Engineers' charges had up to May 1929 been in the charge of a Deputy Chief Engineer. At the beginning of May 1929, this title was done away with and this Section or Division was placed in the charge of an Executive Engineer drawn from the ranks of the Public Works Department.

With effect from 1st March 1930, the Development Department was abolished and the work done by it was distributed among the other Departments of Government, the Engineering operations on the Back Bay Reclamation Scheme being taken over by the Public Works Department. The Executive Engineer, Back Bay Reclamation Division, was then placed under the control of the Superintending Engineer, Northern Circle, in the Public Works Department. After the cessation of dredging operations in March 1929 attention was devoted principally to the completion of the reclamation of blocks 1, 2, 7 and 8 by dryfilling brought by train.

2. *Dryfilling*.—During the year ending 31st March 1930, 11,37,000 tons of dryfilling were brought in by train at a cost of Rs. 12,48,000 giving a cost of Rs. 1-1-7 per cubic yard or ton. The quantities of dryfilling and the costs per cubic yard or ton in previous years were :—

Year.				Quantity.	Cost per ton.		
					Rs.	a.	p.
1924-25	..	..	..	1,39,000	1	4	9
1925-26	..	..	..	4,24,000	1	3	7
1926-27	..	..	..	8,71,000	1	8	1
1927-28	..	..	..	10,42,000	1	3	1
1928-29	..	..	..	12,28,000	1	2	2

The cost per ton in 1929-30 was therefore the lowest yet reached, which is satisfactory.

In addition, in 1929-30, 67,750 tons were brought in by motor lorries at an average cost per ton of Re. 0-9-0, this material being debris and rubbish from buildings, etc., demolished in the city. The material brought in by motor lorries was deposited in blocks 1 and 2 near the Churchgate Railway Station and the 11,37,000 tons brought in by train were distributed as follows :—

				Tons
Into Block 1	..	..	..	3,45,000
Into Block 2	..	..	..	5,50,000
Into Block 7	..	..	..	96,000
Into Block 8	..	..	..	1,46,000
				11,37,000

The dryfilling put into block 7 was deposited just inside the seawall in order to prevent the sea washing through the rubble mound under that wall, and thereby softening the dredged filling which had previously been deposited in that block.

3. *Block 8.*—The reclamation of this was completed by 3rd May 1929, and thereafter practically nothing was done to this block except a certain amount of adjustment of the surface in order to enable the rain water to run off during the monsoon. Levels of the surface were taken conjointly with the Military authorities before and after the monsoon, with the satisfactory result that after the monsoon it was found that the surface had nowhere sunk below the final desired formation level.

Most of the sidings and workshops, etc., in this block were removed after the monsoon of 1929, and the Back Bay House, Colaba, which had been sold to the Military authorities was vacated at the end of December 1929. In the meanwhile, on the 3rd of May 1929, the Government of India were informed that the reclamation of block 8 was completed and that Government were invited to take the block over and to pay for it at the agreed price of Rs. 20 per square yard. The Government of India contended that the land in this block was not in a satisfactory condition, and after considerable correspondence between the Government of India and the Government of Bombay, the matter was finally referred to the decision of an Arbitrator, assisted by an Engineer Assessor. The arbitration proceedings did not take place during the year under review but in May 1930 and the award made by the Arbitrator has since been published for general information in the *Bombay Government Gazette*, dated the 19th June 1930.

4. *Block 1.*—As soon as dryfilling into block 8 was completed in May 1929, the supply of dryfilling was diverted to block 1, dredging operations into which had ceased in April 1928. Dryfilling into block 1 was completed by October 1929 by which date the block had been reclaimed up to the final desired formation level.

5. *Block 2.*—As soon as block 1 was completed, the dryfilling supply was diverted into block 2, dredging into which had ceased in March 1929. By the end of the year under review about three-fourths of block 2 had

been reclaimed up to the final desired formation level, and dryfilling operations into that block were still in progress.

6. *Blocks 1 and 2.*—During the year under review, the layout or development plan for these two blocks as prepared by the Back Bay Layout Committee was approved by Government and has since been published for general information. The Back Bay Layout Committee did not report on the proposals of the Consulting Surveyor to Government for the layout of block 7, and Government have decided to take separate action in due course on the Consulting Surveyor's proposals in respect of this block. Following on this decision, the functions of the Back Bay Layout Committee have been merged in those of the Standing Advisory Committee for the Back Bay Reclamation Scheme referred to at the end of this Report, which Committee is a thoroughly representative body.

A commencement was made with the construction of the parapet along the seawall in block 1 and about 500 feet length was done. This work was then suspended, as it was considered advisable to revise the design of this parapet. The revised design was finally approved in March 1930, and the construction of this parapet wall has since been resumed.

7. *Seawall.*—About Rs. 18,000 were spent in the year on maintenance of the seawall, and no material damage was done to it in the monsoon of 1929. In several previous monsoons, however, including that of 1928 a certain amount of damage was done between ch. 1300 and 1600 in block 1, and previous to the monsoon of 1929 about Rs. 19,000 were spent on tipping rubble and heavy boulders in front of this particular section. The result was satisfactory, and the wall suffered no material damage in the monsoon of 1929.

8. *Submarine Cables.*—During this year arrangements were made for the construction of a new Cable House on the seawall for the Eastern Telegraph Company, Limited, in the place of the present temporary one and for the laying of new cables across the reclamation. These works have since been taken in hand.

9. *Sanitation and anti-malarial measures.*—These were satisfactorily carried out during the year at a total cost of about Rs. 10,000 as against Rs. 16,000 in the year before, the reduction being due largely to the completion of block 8 with the result that there was a much less area of exposed dredged filling over which anti-malarial operations had to be carried out. A report of the work done by the Sanitary Committee, Back Bay Reclamation Scheme, from 1st April 1929 to 31st March 1930 is appended to this report.

10. *Kandivli Quarries.*—Very considerable economies were made at these quarries with the result that the maintenance and repairs to the property, buildings and machinery, etc., cost Rs. 11,000 only as against Rs. 21,000 in the previous year.

11. *Sales of surplus stores.*—The results of the sales of surplus stores, plant, machinery, etc., at the end of March 1930 are given in Appendix VI to this Report. It will be noticed that up to the beginning of the year,

articles of which the original cost was Rs. 13,63,000 had been sold for Rs. 3,23,000 giving a percentage of 23 per cent. During the year articles of which the original cost was Rs. 14,28,000 were sold for Rs. 1,35,000 giving a percentage of 9 per cent., and the total result to the end of the year was that articles of which the original cost was Rs. 27,91,000 had been sold for Rs. 4,58,000 or 16½ per cent. The drop in the percentage realised during the year under review is largely due to the fact that a considerable quantity of dredging pipes was disposed of. Although of course in the first instance they had cost large sums of money they had become so worn and corroded by use that they fetched only the scrap value of the material in them.

12. *Miscellaneous.*—As has already been mentioned above, cross-sections were taken twice during the year of the surface of block 8. In addition, cross-sections were taken twice during the year of the surface of the dredged filling in block 7 in order to ascertain what the shrinkage in that dredged filling had been since it was deposited. Dredging operations into block 7 ceased in May 1927, and by May 1930, i.e. in 3 years, it was found that the shrinkage in the dredged filling in this block had been approximately 41 per cent. of the volume of the dredged filling in the block when dredging operations ceased. Cross-sections were also taken of the sea-bed in blocks 3, 4, 5 and 6, the reclamation of which has not yet been commenced, in order to ascertain whether any silting or erosion has taken place in those blocks which are partly enclosed by the seawall. No accurate deductions can yet be made from these cross-sections owing to the fact that in these blocks there is still a considerable amount of soft material which overflowed into them during the dredging operations into blocks 1, 2, 7 and 8. It is proposed that cross-sections of blocks 3 to 6 be continued to be taken before and after each monsoon in future, as once the soft overflowed dredged material in these blocks has settled down, these cross-sections will show whether any natural silting has taken place in these blocks.

Arrangements were made to take borings in blocks 1 and 2 in order to ascertain the level at which rock will be found in those blocks. This information will be useful when building operations commence in these blocks and sewers laid under the roads. These borings were commenced in May 1930.

13. In accordance with the recommendations made in paragraph 175 of the Mears' Committee's Report, Government appointed a small Committee to advise them on all matters regarding the Back Bay Reclamation Scheme which are referred to them for opinion. This Committee again did useful work during the year. A list of the members of this Committee is given in Appendix VII.

Report of the work done by the Sanitary Committee, Back Bay Reclamation Scheme, from 1st April 1929 to 31st March 1930.

1. During the year under report 8 meetings of the Committee were held at the Back Bay House and the reclamation works were inspected with the Chief Engineer and the Medical and Sanitary Officer, Back Bay Reclamation Scheme.

2. Brevet-Col. F. P. Mackie, O.B.E., M.D., V.H.S., I.M.S., resigned his membership of the Sanitary Committee of the Back Bay Reclamation Scheme as ex-officio member and Chairman. He received the thanks of Government for his valuable services. The Sanitary Committee also passed a resolution, placing on record their appreciation of the zeal, ability and courtesy with which he had discharged the duties of Chairman for five years.

3. On the resignation of Brevet-Col. F. P. Mackie, Sir Nasarvanji H. Choksy, Kt., C.I.E., M.D., was appointed as Chairman under Government Resolution, Development Department, No. B1/7/S.A. of 18th April 1929.

4. The Committee at its meeting held on 4th April 1929 passed a special resolution congratulating Sir Nasarvanji Choksy, Kt., C.I.E., M.D., upon the well merited honour of knighthood conferred upon him by His Majesty the King-Emperor for his great services in the cause of humanity.

5. Dr. J. E. Sandilands, M.C., M.D., D.P.H., the Executive Health Officer of the Bombay Municipality who was a very valuable member of the Committee, resigned in April 1929 on retirement, when the Committee passed a resolution for his very valuable services, placing on record their appreciation of the zeal, ability and courtesy with which he helped the Committee in the disposal of business for a period of six years.

6. As the Chief Engineer Mr. K. S. Framjee, C.I.E., was severing his connection with the Back Bay Reclamation Scheme the Committee placed on record their appreciation of his services and the help given to the Committee in the disposal of business.

7. Government under their Memorandum (Development Department) No. B1/7/S.C., dated the 9th April 1929, sanctioned a grant of Rupees three hundred and seventy-four for contingent expenditure of the Committee for the official year 1929-1930.

8. In order to improve the sanitary condition of blocks Nos. 5 and 6, the Committee inspected all the areas in the scheme and after discussion resolved at its meeting held on 18th April 1929 that the Chairman be authorised to make a representation to the Secretary to the Government of Bombay, Development Department, on the lines of the previous report of 25th February 1927 and urged very strongly the desirability of carrying out the following recommendations:—

“1. The Committee considers that the danger to public health will be accentuated if the conditions are allowed to remain as they are at present and if reclamation is allowed to terminate at block 7.

2. The Committee is of opinion that no further action need be taken at present in blocks 3 and 4, but as regards block 6 it considers that the conditions as they are constitute a danger to public health.

3. The Committee considers that the present conditions in block 5 are a potential danger to public health and that the area at present occupied by rocks and mangrove bushes should be entirely filled in.

4. The danger to public health referred to is mainly concerned with the breeding of mosquitoes and the occurrence of malaria.”

To this proposal Government under their No. B1/7/S.C. of 31st July 1929 replied that instead of reclaiming the land as proposed by the Sanitary Committee, it would be sufficient to deal with the situation by continuing the anti-mosquito breeding operations over this area the cost of which should be much less than that of the present operations in blocks Nos. 1, 2 and 8 and that further reclamation could not be undertaken for financial reasons.

9. In February 1930, the Committee's opinion was invited as to the sanitary conditions of the surroundings if a part only of block 7 at the east end measuring about 28 acres is reclaimed and made available for residential purposes or as a recreation ground. To this the Committee offered the following opinion :—

" 1. If 1,200 feet of block 7 are filled in as proposed the sanitary condition of the area will be immediately improved and the site thus formed can be utilised for *purposes of recreation only*.

2. It is greatly desirable that the whole of block 7 should be filled in when it will be suitable for residential *purposes*.

3. Reference was made to the opinion given in paragraph 7 above."

10. The long standing dispute regarding the proposal of the Municipality for allowing an overflow of sewage from the manhole at the junction of Napier and Beach Roads in Colaba was settled after discussion at the meeting with the Chief Engineer, Back Bay Reclamation Scheme, the Executive Health Officer and the Drainage Engineer, Bombay Municipality.

The recommendations were :—

" 1. To provide an overflow arrangement from the Municipal sewer to the Bombay Development Department storm water drain ;

2. Provision of proper airtight manhole frames and covers over the storm water drain ;

3. Construction of intercepting trapped chambers at the connection of the subsidiary and kutchha open drains with the main storm water drain ;

4. Provision of two vent-shafts—one at the manhole on the storm water drain where the connection is proposed to be made and the other at the head of the main storm water drain."

The work was subsequently carried out.

11. On a reference from Government regarding retaining the services of the Medical and Sanitary Officer, Back Bay Reclamation Scheme, for the year 1929-1930, the Committee resolved " that as blocks Nos. 7, 2 and 1 would require constant supervision for a considerable period (block No. 7 being in close proximity to the military area) and as a reduction of about Rs. 1,100 per month had already been made in the establishment charges of the Medical and Sanitary staff, the Committee was of opinion that the services of the Medical and Sanitary Officer be retained for the present "

Under Government Resolution, Development Department, No. S.C./1296 of 25th June 1929 Dr. H. D. Khote's services were extended up to February 1930.

12. The Malaria Commission of the League of Nations comprising six members met the Committee informally and inspected the reclaimed and unreclaimed areas on 28th August 1929 in order to obtain some general idea of the conditions during the monsoon for comparison with what would exist in the dry season. No visit was however paid in the dry season as the members had carefully seen the whole area on their previous visit.

13. The labour force connected with the scheme was housed in three separate camps, one in Charni Road and two at Colaba. Besides these there were two more temporary camps on the seawall put up by the Contractor. The average total strength during the year was approximately 1,384.

14. There were no special diseases prevalent in these camps except three cases of Plague in the Lascar Lines when 1,094 persons were inoculated with anti-plague vaccine, and five cases of small-pox when 269, 588 and 995 persons were revaccinated on three different occasions.

15. Government under their Resolution (Development Department) No. S.A. 1955 of 25th September 1929 communicated their sanction with the permission of the Government of India to continue the use of the Ordnance Lascars' Quarters site as a cooly camp up to 31st December 1930.

16. The cooly camp in Colaba, Back Bay, was vacated on 31st December 1929 and the coolies housed in the Lascar Lines.

17. The anti-malarial operations consisted of regular inspections and treatment of all actual and likely breeding places of mosquitoes. Weekly house to house inspection was made in Colaba and Marine Lines and at every such inspection a questionnaire card was presented to the occupants of the houses where they were required to state if they were troubled with mosquitoes. Very few adult mosquitoes were caught during these inspections.

18. During the rainy season a few larvae of anopheles mosquitoes were detected here and there in the fissures and pools in the reclaimed areas, but they were not allowed to reach the pupal stage and the areas were frequently treated with larvacides.

19. The following table shows the ratio of admission per 1,000 of strength for malaria amongst the British Troops in the British Military Hospital at Colaba, Bombay :—

Before the commencement of Reclamation anti-malarial operations.		After the commencement of Reclamation anti-malarial operations.	
Year.	Ratio.	Year.	Ratio.
1921	972.46	1923	152.53
1922	387.14	1924	238.27
		1925	165.05
		1926	180.45
		1927	150.41
		1928	98.06
		1929	60.68

20. The spleen and parasite rates of the children in the Colaba Reclamation camp in 1929 were :—

(A) *Spleen Rate*.—In 15 cases out of 77 persons examined was the spleen found enlarged giving a percentage of 21·22.

(B) *Parasite Rate*.—Out of 111 children examined parasites were found in 4 giving a percentage of 3·60.

21. *The anti-malarial staff* consisted of one Medical and Sanitary Officer and 12 coolies.

The Medical Staff consisted of one Sub-Assistant Surgeon, two Compounders and three Dispensary servants.

22. *Cost of operations*—

	Rs.
Medical and Sanitary Officer ..	450 per mensem <i>plus</i> Rs. 150 per mensem motor allowance.
Medical ..	2,500
Anti-malarial ..	1,650
Sanitary ..	8,000

23. Dr. H. D. Khote's report on the Medical and Sanitary operations for the year is attached hereto.

24. Both Dr. H. D. Khote and Sub-Assistant Surgeon Kabaria worked with diligence and assiduity.

25. Dr. R. K. Mhatre, L.M. & S., D.P.H., D.T.M., Malaria Officer, Bombay Municipality, was appointed an additional member of the Sanitary Committee, Back Bay Reclamation Scheme, under Government Resolution No. S.B. 2359 of 28th November 1929.

26. The Committee again cordially acknowledge the valuable services rendered by Dr. K. B. Shroff, L.M. & S., D.P.H., D.T.M., J.P., as Honorary Secretary since the last seven years and desire that they be once again brought to the favourable notice of Government. Dr. Shroff resigns his post from 1st April 1930 on proceeding to Europe on account of his health.

K. B. SHROFF,	NASARWANJI CHOKSY,
L.M. & S., D.P.H., D.T.M.,	Chairman,
Honorary Secretary,	Sanitary Committee,
Sanitary Committee,	Back Bay Reclamation Scheme.
Back Bay Reclamation Scheme.	

Annual report of Medical and Sanitary transactions for the year ending December 1929 by Dr. H. D. Khote.

The Medical, Sanitary and Anti-malarial operations connected with the reclamation scheme were in my charge during the year under report. The labour connected with the scheme is housed in three separate camps, situated one behind Charni Road Station and the other two in Colaba. Besides these there were two more temporary camps on the sea-wall, one at Colaba in the beginning of the year and the other at Church Gate Station after the monsoon. The superior and subordinate staff

connected with the scheme, the labour engaged on the works, and the crew on the dredgers, till the dredging section was abolished in June last, all these got free medical attention, and the average total strength of persons under these categories, during the year under report, was approximately 1,384. In addition to these, one more camp situated at Kandivlee is in our charge and all the Government coolies working there get free medical treatment.

Medical Relief.—An out-door dispensary is attached to each of the three reclamation camps. In-door hospital accommodation is not provided but serious cases requiring prolonged treatment or major operations are sent to any local hospitals. The total number of cases sent to civil hospitals from the reclamation camps during the year under report was 21. One bed, however, is kept equipped in these dispensaries to receive any serious case and to keep till such time as arrangements can be made to send it to the civil hospital.

The total number of out-patients during the year was as follows :—

New cases only	..	..	5,136
Old and new cases	..	..	19,315

The number of minor surgical operations performed during the year was 206.

Prevailing Diseases.—A very large majority of cases attending the dispensaries consists of minor injuries which is to be expected from the nature of the work they are engaged in ; otherwise there was no special prevailing disease.

Infectious Diseases.—There were three cases of plague in Lascar Lines Camp in March and two cases of small-pox in July ; with the exception of these three cases there was no epidemic of any disease in any of the camps during the year under report.

Inoculation against plague was carried out amongst the coolies after the occurrence of the case. In all about 1,094 persons were inoculated.

The subordinate staff of Charni Road station, about 105 in number, were vaccinated in March and the coolies in Lascar Lines, about 269 in all, were vaccinated in July.

Sanitation.—One day every week is set apart in each camp when every room is emptied, boxes are brought out and a disinfectant is sprayed all over. Dustbins with well fitting lids are put on raised cement platforms in sufficient numbers for each row of rooms to prevent accumulation of rubbish in and about the rooms. All latrines are of the flushing type except those in the temporary camps, and bathing places are provided for men and women.

In the temporary camps basket privies were provided and the excreta was incinerated in an incinerator at Colaba, while at Church Gate it is taken in the municipal carts and disposed of in the municipal sewers. Strict supervision is maintained in these camps to prevent any nuisance arising through the primitive habits of the coolies.

Rat destruction is carried out throughout the year by setting traps in the camps and thus a good number of rats is accounted for. Bazaars in the Camps are under strict supervision,

Anti-malarial operations.—As usual the anti-malarial operations consisted of regular search and treatment of all actual and likely breeding places created during the rainy season on the reclaimed land and the large pools formed during and after the dredging operations on the unreclaimed soil. The most important permanent breeding places in this area are:—

(1) Large and deep fissures formed in the sandy layer after the dredging operations.

(2) Large pools formed at the junction of the dredging pipes.

(3) And the shallow trenches and keyholes all along the seawall.

Besides this the portion of the foreshore from Church Gate to Colaba which consists of blocks Nos. 3, 4, 5 and 6 and which are not to be reclaimed for the present also required inspection and treatment. The position in block No. 6 is very peculiar because it is shut off from the sea in front by the unfinished seawall and on its right a storm water drain runs to nearly three-fourths of its length. This prevents the tide washing the foreshore with the result that many pools remain intact. In addition to this, mangroves also grow thickly in this area. This growth provides good shelter for the mosquito larvae. All the mangroves were cut during the year under report. Paris green and larvacide were used when and where necessary and breeding was effectively checked thereby. Weekly house to house inspection is made in Colaba and Marine Lines reclamation area; at every such inspection, a questionnaire is presented to the occupants of the houses where they are required to state if they are troubled by mosquitoes. Adult mosquito catches were also frequently done in all the camps.

The result of these operations so far are very satisfactory, as can be seen from the statistics received from the British Military Hospital at Colaba. The ratio of admission per 1,000 of strength for malaria amongst the British troops in Bombay in 1929 was 60·68. This figure compares very favourably with previous years and is the lowest since the commencement of the Anti-malarial operations in Colaba. The following table compares this ratio with that of the previous years:—

Ratio of admission per 1,000 of strength for Malaria amongst the British Troops in Bombay.

Before the commencement of Reclamation anti-malarial operations		After the commencement of Reclamation anti-malarial operations	
Year	Ratio	Year	Ratio
1921	972·46	1923	152·53
1922	387·14	1924	238·27
		1925	165·05
		1926	180·46
		1927	150·41
		1928	98·06
		1929	60·68

Total malarial incidence amongst the British Troops in Colaba for the year 1929 :—

Months	1923	1924	1925	1926	1927	1928	1929		Total
							Fresh	Relapse	
January ..	9	5	10	2	8	6	1	3	4
February ..	8	6	5	5	4	7	1	..	1
March ..	2	7	4	6	11	1	1	1	2
April ..	3	6	8	..	12	3	2	2	4
May ..	5	5	9	6	17	7	..	..	..
June ..	3	5	3	3	15	12	2	2	4
July ..	7	5	6	3	15	4	3	4	7
August ..	10	7	8	16	7	5	..	3	3
September ..	21	24	19	56	4	4	8	3	11
October ..	44	45	37	44	5	12	2	3	5
November ..	20	25	25	21	11	14	6	1	7
December ..	22	26	7	14	18	6	1	2	3
Total ..	154	166	141	176	127	81	27	24	51

Spleen and Parasite index of the Colaba reclamation camp taken in 1929 was as follows :—

Age	Numbers Examined	Not Palpable	Palpable	Up to Umbilicus	Percentage
Under 2 years ..	14	14	..	..	..
Between 3 and 5 years ..	36	28	8	..	22·22
Do. 6 and 10 years ..	21	14	7	..	33·33
Total ..	71	56	15	..	21·12

Parasite Rate.

Age under two years	Numbers Examined	Parasite found	Percentage
Under 2 years ..	27	1	3·70
Between 3 and 5 years ..	38	1	2·63
Do. 6 and 10 years ..	46	2	4·34
Total ..	111	4	3·60

In February 1929, 100 slides were taken from healthy coolies to see the presence of gametes. In none of them any gametes were detected.

Staff and Cost of the Operations

The staff consists of the following :—

Medical and Sanitary Officer	.. One.
Sub-Assistant Surgeon	.. One.
Compounders	.. Two.
Dispensary servants	.. Three

(One man has been retrenched from 12th December 1929.)

Sweepers	.. Fourteen.
----------	--------------

(Four sweepers have been retrenched from December 1929.)

Anti-malarial coolies	.. Twelve.
-----------------------	------------

(Four coolies retrenched from 15th November 1929.)

Expenditure.

Head					Estimated expenditure for the year 1929-30	Amount actually spent during the year 1929-30
					Rs.	Rs.
Sanitary	..	..	..	..	10,000	8,000
Anti-malarial	..	..	..	..	6,000	1,650
Medical	..	..	..	..	3,000	2,500

Salaries

Medical and Sanitary Officer	..	Rs. 450 per mensem <i>plus</i> Car allowance Rs. 150 per mensem.
Sub-assistant Surgeon	..	Rs. 231 per mensem including allowances.
Compounders	..	Rs. 50 per mensem.
Anti-malarial Coolies	..	Rs. 25 per mensem.

Members of the Sanitary Committee Back Bay Reclamation Scheme for 1929-1930.

1. Brevet. Col. F. P. Mackie, O.B.E., M.D., V.H.S., I.M.S.
(Chairman).
2. Sir Nassarvanji Choksy, C.I.E., M.D.
3. Lt. Col. W. M. Houston, M.B., Ch.B., D.P.H., I.M.S.
4. Dr. J. E. Sandilands, M.C., M.D., D.P.H.
5. Lt. Col. R. Row, O.B.E., M.D.
6. Dr. Sorab C. Hormusjee, M.D., D.P.H.
7. Dr. H. M. Masina, F.R.C.S.
8. Dr. P. A. Dalal, L.M. & S., D.T.M. & H.

9. Dr. J. S. Nerurker, B.Sc., L.M. & S., D.P.H. (Cantab.)
10. Dr. R. K. Mhatre, L.M. & S., D.P.H., D.T.M.
11. Dr. K. B. Shroff, L.M. & S., D.P.H., D.T.M. (Honorary Secretary).

N.B.—On the resignation of Brevet. Col. F. P. Mackie, O.B.E., M.D., V.H.S., I.M.S., who was an ex-officio member being Director, Haffkine Institute, his successors, Major S. S. Sokhey, I.M.S., and Major L. A. P. Anderson, I.M.S., filled the vacancy in the Sanitary Committee consecutively.

II. Suburban Development Scheme.

Water Supply Schemes.

Suburban Scheme No. 19 (Salsette Water Supply)—

The following sub-schemes and extensions for water supply were completed during the year:—

	Cost Rs.
(1) Water supply to Vile Parle— T. P. S. VI—Laying 3" and 2" pipe line ..	1,720
(2) Water supply to Suburban Scheme No. VII-Khar— (a) Laying 3" pipe line along 13th, 15th and 16th Roads	3,998
(b) Laying 3" pipes line along 30 feet road between 14th and 15th roads north of 1st Road ..	480
(3) Laying 2" G. I. pipe line to Jogeshwari Railway Station, B.B. & C.I. Railway ..	390
(4) Laying 2" dia. pipe line in Sutarwar at Vile Parle ..	533
(5) Laying 2" pipe line along Narayan Road, Ghatkopar ..	485
(6) Laying 2" pipe line in Suburban Scheme No. III (1st Road)	430

The pressure in all the Schemes was satisfactory. Owing to great demand for water during hot weather, it was found that the 3" pipe line supplying Suburban Scheme No. VII-Khar was inadequate to meet the demand. The loss in pressure due to small size of pipe was about 50 lbs. and water could not rise to the higher portions of the Scheme. Hence this 3" pipe was supplemented by a 5" pipe line at a cost of Rs. 3,600. The pressure at once improved by about 50 lbs.

A statement showing the figures of consumption, number of connections, etc., in each sub-scheme is attached to this report (*vide* Appendix No. VIII).

Suburban Scheme No. 21 (Ambernath Water Supply)—

The original works put in hand and completed were—

- (a) Laying a 3" dia. branch line for water supply to the G.I.P. Railway at Badlapur.
- (b) Providing special fittings and a 2" pump for the 21" Delivery Main at Ambernath.

The water supplies to Ambernath, Badlapur and G.I.P. Railway were maintained in order.

The number of connections taken up to 31st March 1930 in Badlapur village was 28 (*vide* Appendix No. VIII).

Railway Schemes.

Suburban Scheme No. 17 (Central Salsette Tramway)—

The Central Salsette Tramway which was entirely in charge of G.I.P. Railway since 8th October 1927 has been taken back [on 1st April 1930.

Suburban Scheme No. 22 (Kurla-Trombay Railway)—

This is in charge of the G.I.P. Railway.

Electric Supply Scheme.

Suburban Scheme No. 23 (Ambernath Electric Supply)—

The total number of units sold during the year 1929-30 amounted to 2,51,662 of which 2,20,694 were for power and 30,968 for lighting. The working cost for units sold amounted to Rs. 25,225 and the revenue obtained was Rs. 39,270 as against Rs. 37,747 and Rs. 54,927 respectively for the previous year. The amount of energy sold during the year 1929-30 is less than the previous year, as the Western India Match Company have installed their own plant in the Factory and took Government power for their Factory only when they did not generate their own power.

APPENDIX I.

Statement showing the expenditure on Civil and Military Works during the year 1929-30.

Service Head.	Original Works.		Repairs.		Total.	
	Grant.	Outlay.	Grant.	Outlay.	Grant.	Outlay.
1	2	3	4	5	6	7
50, Military Works—	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Works	447	445	62,900	64,243	63,347	64,688
Establishment. { Non-Voted.	..	..	..	..	2,132	1,567
{ Voted ..	..	..	..	..		2,163
Tools and Plant ..	..	..	..	..	347	407
Suspense .. ..	..	..	..	..	....	....
Total, Military Works ..	447	445	62,900	64,243	65,826	68,825
41, Civil Works—Central—						
Buidlings .. { Non-Voted.	54,488	44,925	51,273	52,265	1,05,751	97,190
{ Voted ..	2,42,972	2,38,185	2,49,776	2,49,439	4,92,748	4,87,624
Communications. Non-Voted.	..	..	2,001	1,998	....	1,998
Miscellaneous. Voted ..	..	..	3,750	2,150	....	2,150
Establishment. { Non-Voted.	..	..	..	..	71,125	43,434
{ Voted ..	..	..	..	..	1,10,821	85,022
Tools and Plant. { Non-Voted.	..	..	..	..	3,481	118
{ Voted ..	..	..	..	..	14,990	8,053
Grant-in-aid.. Non-Voted.	..	..	..	..	1,173	1,024
Suspense .. { Non-Voted.	..	..	..	..	12,312	-1,80,241
{ Voted ..	..	..	..	..	....	-50
Deduct—English Non-cost of Stores Voted and Establishment.	..	..	..	..	-4,800	-1,197
Loss or gain by Exchange. Non-Voted.	..	..	..	..	....	10
Expenditure in England. Non-Voted.	..	..	..	..	4,800	1,187
Total, 41, Civil Works Central.	2,97,460	2,83,110	3,06,800	3,05,852	8,21,401	5,46,322
Carried forward ..	2,97,907	2,83,555	3,69,700	3,70,095	8,87,227	6,15,147

APPENDIX I—*contd.*

Service Head. 1	Original Works.		Repairs.		Total.	
	Grant.	Outlay.	Grant.	Outlay.	Grant.	Outlay.
	2.	3	4	5	6	7
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Brought over ..	2,97,907	2,83,555	3,69,700	3,70,095	8,87,227	6,15,147
41. Civil Works—Provincial—						
Buildings (Reserved) ..	50,000	49,824	2,67,000	2,33,926	3,17,000	2,83,750
Do. (Transferred)..	14,51,356	11,83,616	51,44,215	16,45,838	65,95,571	28,29,454
Communications ..	9,78,379	7,02,415	..	36,05,452	9,78,379	43,07,867
Miscellaneous ..	10,031	11,184	..	32,176	10,031	43,360
Establishment { Non- (Reserved). Voted ..	..	..	..	..	..	25,544
	..	..	..	..	..	63,235
Establishment { Non- (Transferred). Voted ..	..	..	..	..	14,03,969	5,45,962
	..	..	..	..	46,65,121	16,10,709
Tools and Plant (Reserved)	..	..	..	..	..	15,563
Do. (Transferred).	..	..	..	..	4,86,824	2,65,911
Grant-in-aid ..	..	..	..	..	16,50,840	16,62,094
Suspense ..	..	..	..	..	50,650	-95,563
Deduct—English cost of Stores and Establish- ment. (Transferred)— Stores ..	..	..	..	..	-1,13,900	-51,178
Establishment { Non- Voted ..	..	..	..	..	-3,03,400	-2,72,366
	..	..	..	..	-12,800	-24,107
Loss or Gain by exchange Stores.	..	..	..	..	..	386
Loss or gain by Estab- lishment. { Non- Voted ..	..	..	..	..	..	2,300
	..	..	..	..	..	172
Expenditure in England— Stores ..	..	..	..	..	1,13,900	50,792
Establishment { Non- Voted ..	..	..	..	..	..	2,70,066
	..	..	..	..	..	23,935
Total, 41, Civil Works Provincial ..	24,89,766	19,47,039	54,11,215	55,17,392	1,58,42,185	1,15,57,881
Carried forward ..	27,87,678	22,30,594	57,80,915	58,87,487	1,67,29,412	1,21,73,028

APPENDIX I—*concl.*

Service Head, 1	Original Works.		Repairs.		Total.	
	Grant.	Outlay.	Grant.	Outlay.	Grant.	Outlay.
	2	3	4	5	6	7
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Brought over ..	27,87,673	22,30,594	57,80,915	58,87,487	1,67,20,412	1,21,73,028
<i>60, Civil Works—</i>						
Buildings ..	33,58,932	29,89,644	..	..	33,58,932	29,89,644
Communications ..	8,79,508	6,35,636	..	..	8,79,508	6,35,636
Miscellaneous ..	..	..	..	..	....	....
Establishment. { Non- Voted	..	..	..	..	....	1,66,393
	..	..	..	..	....	5,67,474
Tools and Plant ..	..	..	..	..	....	57,158
Total, 60, Civil Works ..	42,38,500	36,25,280	..	..	42,38,500	44,16,305
District Local Fund ..	..	..	..	..	....	1,18,611
Deposit contribution ..	..	..	..	..	....	17,72,818
Grand total ..	70,26,173	58,55,874	57,80,915	58,87,487	2,09,67,912	1,84,80,757

P. G. SHAH,
Deputy Accountant General.

APPENDIX

Statement of Roads not within Municipal boundaries, giving lengths Local Authorities, respectively

Name of Circle	Name of Division	Length of metalled roads maintained by the Public Works Department		Length of unmetalled roads maintained by the Public Works Department	
1	2	3		4	
Presidency proper		M.	Ft.	M.	Ft.
		(a)			
Northern Circle	Thana	422	240	8	660
	Surat	(b) 172	8,423	(b) 18	2,991
	Broach	53	5,173	..	..
	Kaira	180	3,710	9	680
	Panch Mahals	(e) 156	1,507	17	2,640
	Ahmedabad	(h) 138	1,671	(h) 64	4,620
	Total, Northern Circle ..	1,143	5,187	118	1,031
Central Circle	Poona	(i) 312	2,967	(i) ..	..
	Head quarters works ..	24	4,960	1	1,980
	Satara	446	3,579	38	4,290
	Sholapur	(l) 225	4,036	..	..
	Ahmednagar	323	1,771	57	3,032
	Nasik	514	3,778	9	1,066
	East Khandesh	(o) 323	257	3	..
	West Khandesh	(r) 337	3,880	(r) 10	3,000
	Total, Central Circle ..	2,508	4,117	120	3,767

Note.—The lengths of Provincial roads included in columns 3 and 4 of the above statement are exclusive now required to contribute towards the maintenance of Provincial roads passing through their limits

(a) The decrease in column 3 and the increase in column 9 is due to verification of length of roads
(b) The increases in columns 3 and 4 are due to certain length of roads having been provincialized certain lengths of roads.

(c) The increases in columns 5 and 6 are due to some new roads newly maintained by the District
(d) The increase in column 5 and the decrease in column 6 is due to certain length of unmetalled

(e) The increase in column 3 is due to the addition of certain length of road during the year.
(f) The increase in column 5 is due to certain length of road having been metalled during the year.

(g) The increase in column 6 is due to the addition of certain length of unmetalled road during the
(h) The increases in columns 3 and 5 and the decreases in columns 4 and 6 are due to certain lengths

(i) The increase in column 5 and the decreases in columns 3, 4 and 6 are due to inclusion of Provincial roads.

(j) The decrease in column 6 is due to certain length of unmetalled road having been metalled during
(k) The increase in column 5 and the decrease in column 6 is partly due to the conversion of certain to the District Local Board.

(l) The increase in column 3 is due to certain length of road having been taken over for maintenance.

(m) The increase in column 5 and the decrease in column 6 is due to the transfer of certain roads

(n) The increases in columns 5 and 6 are due to correct length of existing roads as now communicated

(o) The decrease in column 3 is due to the transfer of certain roads to the District Local Board.

(p) The increase in column 5 and the decrease in column 6 is partly due to the certain roads having from unmetalled to metalled.

(q) The decrease in column 9 is due to the transfer of certain roads to the District Local Board.

(r) The increases in columns 3 and 4 are due to the addition of certain lengths of new roads.

(s) The increase in column 6 is due to certain length of road having been constructed during the year.

II

of metalled and unmetalled roads maintained by the Public Works and during the year 1929-30.

Length of metalled roads maintained by the local authorities		Length of unmetalled roads maintained by the local authorities		Total length of metalled roads		Total length of unmetalled roads		Remarks	
5		6		7		8		9	10
M.	Ft.	M.	Ft.	M.	Ft.	M.	Ft.	M.	Ft.
358	2,619	88	1,469	800	2,868	96	1,129	(a) 24	995
128	(b) 2,088	(b) 255	2,057	301	1,131	274	368	....	....
(c) 34	1,790	(c) 165	300	88	1,688	165	300	1	1,920
(d) 51	562	(d) 14	3,847	231	4,281	23	4,527	10	3,218
(f) 20	3,708	(f) 22	2,228	177	25	39	4,868	1	1,980
(h) 50	740	(h) 268	299	197	2,411	332	4,919	....	....
652	1,937	814	240	1,796	1,844	932	1,271	37	2,833
(i) 215	192	(j) 1,394	2,935	527	3,159	1,394	2,085	(k) 37	1,040
(k) 330	990	(k) 1,150	4,290	24	4,960	1	1,980	8	77
(m) 147	4,290	(m) 471	2,606	776	4,509	1,189	3,300	5	4,531
405	482	335	3,900	373	3,055	471	2,606	19	4,258
(n) 148	3,008	(n) 842	2,118	728	2,253	303	1,712	6	1,705
(p) 242	3,808	(p) 257	5,074	663	1,501	851	3,183	13	4,491
30	518	(s) 42	608	565	4,060	200	5,074	(q) 18	1,063
				370	4,407	52	4,568	8	4,188
1,528	2,727	4,496	471	4,037	1,564	4,616	4,238	118	1,133
								1	255

of portions passing through Municipal limits. The Municipalities in the Bombay Presidency are not and the lengths of these are shown in the 'remarks' column.

in Municipal limits.

and taken over from the Local Board. The increases in columns 5 and 6 are due to reclassification of Local Board.

road having been metalled during the year.

year.

of unmetalled roads having been metalled during the year.

roads at present being maintained by the District Local Board which were hitherto shown as Provincial.

the year.

unmetalled roads to metalled roads and partly to the transfer of certain Taluka Local Board roads

from unmetalled to metalled.

by the District Local Board.

been taken over for maintenance by the District Local Board and partly to the transfer of certain roads

APPENDIX

Name of Circle 1	Name of Division 2	Length of metalled roads maintained by the Public Works Department 3		Length of unmetalled roads maintained by the Public Works Department 4	
		M.	Ft.	M.	Ft.
Southern Circle	Belgaum	(t) 629	3,910	(t) 114	4,509
	Dharwar	(u) 518	3,345	(u) 90	4,290
	Batnagiri	441	4,679	....	
	Kanara	401	1,591	194	430
	Total, Southern Circle ..	2,014	2,965	399	3,949
Deccan Irrigation Circle	Lake Whiting	51	3,668	....	
	Malsiras	95	258	69	5,166
	Total, Deccan Irrigation Circle ..	146	3,921	69	5,166
Irrigation Development and Research Circle,	Nira Left Bank Canal ..	63	4,460	....	
	Special Irrigation .. ..	....		....	
	Total, Irrigation Development and Research Circle.	63	4,460	....	
Sind.	Total for Presidency ..	5,877	4,840	708	3,358
Indus Left Bank Circle	Nasrat Canals	4	0	97	0
	Hyderabad	8	0	119	0
	Fuleli Canals	4	0	56	0
	Northern Jamrao Canal ..	....		834	0
	Southern Jamrao Canal ..	....		670	0
	Total, Indus Left Bank Circle..	16	0	1,276	0

(t) The increase in column 3 and the decrease in column 4 is due to certain length of unmetalled

(u) The decreases in columns 3 and 4 and the increases in columns 9 and 10 are due to certain changes

(v) The decrease in column 5 and the increase in column 6 is due to the reason that the length of Revenue Collectorate and not according to the Public Works Department jurisdiction. The District

(w) The increases in columns 5 and 6 are due to the reason that the length of roads as shown in the and not according to the Public Works Department jurisdiction. The District Local Board have now

(z) The increase in column 6 is due to certain length constructed during the year.

(y) The difference is due to the incorrect figures shown in the previous year's statement. The

(z) The increase in column 5 and the decrease in column 6 is due to certain lengths of unmetalled

II—contd.

Length of metalled roads maintained by the local authorities		Length of unmetalled roads maintained by the local authorities		Total length of metalled roads		Total length of unmetalled roads		Remarks			
								Metalled roads maintained by the P.W.D. in Municipal limits		Unmetalled roads maintained by the P.W.D. in Municipal limits	
5		6		7		8		9		10	
M.	Ft.	M.	Ft.	M.	Ft.	M.	Ft.	M.	Ft.	M.	Ft.
(v)		(v)									
308	3,869	481	4,814	961	2,489	596	4,043	20	1,442	....	
(w)		(w)						(u)		(u)	
594	1,874	282	8,326	1,112	5,129	873	2,336	19	5,030	4	2,625
		(x)									
311	700	840	4,405	753	99	840	4,405	11	2,679	.....	
44	2,297	525	4,743	445	3,888	719	5,173	19	4,055	3	4,403
1,258	3,360	2,131	1,448	3,273	1,045	2,531	117	71	2,646	8	1,748
....		....		51	3,668	....		....		....	
....		....		95	253	69	5,166	3	347	....	
....		....		146	3,921	69	5,166	3	2,347	....	
0	4,120	....		64	3,300	....		....		....	
....											
0	4,120	....		64	3,300	....		....		....	
3,340	1,584	7,440	2,159	9,818	1,114	8,149	232	230	3,679	9	2,003
1	0	(y)				(y)					
		910	0	5	0	1,007	0	....		....	
11	0	608	0	19	0	727	0	....		....	
5	0	700	0	9	0	816	0	....		....	
(z)		(z)									
8	0	219	0	8	0	553	0	....		....	
....		235	0	....		905	0	....		....	
25	0	2,732	0	41	0	4,008	0	....		....	

road having been metalled during the year.

in the Municipal limits.

roads as shown in the statement for 1928-29 were reported by the District Local Board according to the Local Board have now reported the correct lengths of roads and the same are shown in this statement.

statement for 1928-29 were reported by the District Local Board according to the Revenue Collectorate's reported the correct lengths of roads and the same are shown in this statement.

correct figures are now shown in this statement.

roads metalled during the year.

APPENDIX

Name of Circle	Name of Division	Length of metalled roads maintained by the Public Works Department		Length of unmetalled roads maintained by the Public Works Department	
1	2	3		4	
Indus Right Bank Circle	Karachi Buildings ..	M. 29	Ft. 2,640	M. 88	Ft. 2,640
	Karachi Canals ..	18	2,640	4	4,620
	Western Nara ..	12	4,200	16	3,300
	Ghar Canals ..	.....		.....	
	Shikarpur Canals ..	(aa) 21	33	(aa) 2	3,684
	Begar Canals ..	.....		30	2,040
	Total, Indus Right Bank Circle	81	4,323	143	1,044
Total for Sind ..		97	4,323	1,419	1,044
Grand Total ..		5,975	3,853	2,127	4,307

(aa) The increase in column 3 and the decrease in column 4 is due to certain length of unmetalled

II—*concd.*

Length of metalled roads maintained by the local authorities		Length of unmetalled roads maintained by the local authorities		Total length of metalled roads		Total length of unmetalled roads		Remarks			
								Metalled roads maintained by the P.W.D. in Municipal limits		Unmetalled roads main- tained by the P.W.D. in Municipal limits	
5		6		7		8		9		10	
M.	Ft.	M.	Ft.	M.	Ft.	M.	Ft.	M.	Ft.	M.	Ft.
9	2,640	180	4,850	39	0	269	2,310	....		....	
2	1,650	977	2,310	20	4,290	982	1,650	....		....	
2	3,960	1,515	4,700	15	2,970	1,532	2,720	....		....	
0	3,000	750	2,909	0	3,600	750	2,909	....		....	
10	2,840	1,027	1,070	31	2,873	1,029	4,754	....		....	
....		1,118	3,960	....		1,149	1,320	....		....	
25	4,130	5,570	3,950	107	3,173	5,722	5,003	....		....	
50	4,130	8,311	3,950	148	3,173	9,730	5,003	....		....	
3,401	434	15,752	838	9,466	4,287	17,879	5,235	230	3,079	9	2,008

roads metalled during the year.

APPENDIX

Statement showing the expenditure on Provincial Buildings and

1	1921-22		1922-
	41-C. W. Provincial. 2	60-C. W. 3	41-C. W. Provincial. 4
	Rs.	Rs.	Rs.
(i) Expenditure on buildings for original works in the Presidency proper ..	70,17,468	....	18,40,250
(ii) Do. do. Sind ..	12,80,750	....	2,77,527
	83,08,218		21,17,777
(iii) Expenditure on buildings for maintenance in the Presidency proper ..	11,03,937	....	13,70,087
(iv) Do. do. Sind ..	1,04,210	....	1,51,421
	12,68,147		15,30,508
(v) Expenditure on metalled Provincial roads for original works in the Presidency proper ..	19,39,046	....	15,22,488
(vi) Do. do. Sind ..	42,605	....	98,466
	19,81,741		16,20,954
(vii) Expenditure on unmetalled Provincial roads for original works in the Presidency proper ..	5,00,155	....	97,110
(viii) Do. do. Sind ..	....	....	....
	5,00,155		97,110
(ix) Expenditure on metalled Provincial roads for maintenance in the Presidency proper ..	19,85,510	....	24,27,684
(x) Do. do. Sind ..	32,826	....	17,689
	20,18,335		24,45,573
(xi) Expenditure on unmetalled Provincial roads for maintenance in the Presidency proper ..	2,53,711	....	2,35,682
(xii) Do. do. Sind ..	95,939	....	1,27,690
	3,49,650		3,63,322

III.

Roads in the Presidency Proper and in Sind from 1921-22 to 1929-30.

23	1923-24		1924-25		* 1925-26
60-C. W.	41-C. W. Provincial.	60-C. W.	41-C. W. Provincial	60-C. W.	41-C. W. Provincial.
5	6	7	8	9	10
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
21,36,237	12,74,148	46,74,102	11,72,871	36,09,790	12,24,807
7,11,805	1,70,426	5,52,140	3,18,186	8,82,055	4,53,035
28,48,132	14,44,574	52,26,242	14,91,057	44,91,854	16,77,842
....	15,90,041	....	14,69,217	....	15,22,903
....	1,78,426	....	1,91,990	....	1,74,310
	17,77,467		16,61,207		16,97,213
6,94,035	10,92,068	4,51,014	5,36,719	24,18,810	8,30,136
....	73,471	....	26,685	1,39,015	-102
6,94,035	11,65,539	4,54,014	5,63,404	25,57,825	8,30,034
20,903	72,046	20,943	63,591	1,14,266	1,36,216
....	170	....	....	....	13,043
20,903	72,216	20,943	63,591	1,14,266	1,49,253
....	26,60,387	....	27,73,038	....	28,80,514
....	18,291	....	13,996	....	24,444
	26,85,678		27,87,034		29,04,058
....	2,83,378	....	2,81,022	....	2,53,438
....	1,36,482	....	1,30,614	....	1,31,892
	4,19,860		4,11,666		3,85,330

APPENDIX

1	1925-26—contd.		1926-27	
	60-C. W.	41-C. W. Provincial.	60-C. W.	
	11	12	13	
	Rs.	Rs.	Rs.	
(i) Expenditure on buildings for original works in the Presidency proper ..	39,88,192	22,22,421	17,71,645	
(ii) Do. do. Sind ..	13,10,549	7,27,916	7,15,071	
	52,48,741	29,50,337	24,86,716	
(iii) Expenditure on buildings for maintenance in the Presidency proper ..	....	15,95,217	....	
(iv) Do. do. Sind ..	....	2,06,962	....	
		18,02,179		
(v) Expenditure on metalled Provincial roads for original works in the Presidency proper ..	11,41,309	11,19,552	4,09,201	
(vi) Do. do. Sind ..	30,035	11,759	99,541	
	11,71,344	11,31,311	5,08,742	
(vii) Expenditure on unmetalled Provincial roads for original works in the Presidency proper ..	33,048	2,50,893	....	
(viii) Do. do. Sind ..	20,788	601	....	
	53,836	2,51,554		
(ix) Expenditure on metalled Provincial roads for maintenance in the Presidency proper ..	....	30,98,552	....	
(x) Do. do. Sind ..	....	78,029	....	
		31,77,181		
(xi) Expenditure on unmetalled Provincial roads for maintenance in the Presidency proper ..	....	2,55,920	....	
(xii) Do. do. Sind ..	....	89,724	....	
		3,45,644		

III—contd.

1927-28		1928-29		1929-30	
41-C. W. Provincial. 14	60-C. W. 15	41-C. W. Provincial. 16	60-C. W. 17	41-C. W. Provincial 18	60-C. W. 19
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
9,72,027	13,00,972	9,61,174	10,07,442	8,88,923	28,48,681
3,47,801	3,70,005	2,44,881	3,69,562	3,44,517	1,40,963
13,19,918	17,00,977	12,06,056	22,77,004	12,33,440	29,89,644
17,04,038	....	16,43,248	....	15,91,742	....
2,46,822	....	2,07,847	....	2,88,022	....
19,50,855		18,51,095		18,79,764	
7,95,102	5,26,032	7,40,068	5,42,195	5,81,922	5,41,635
31,725	1,74,995	98,454	1,75,326	7,919	94,001
8,76,827	7,01,047	8,38,522	7,17,521	5,89,841	6,35,636
1,65,007	....	1,05,960	....	1,11,174	....
12,313	....	9,172	....	1,400	....
1,77,320		1,15,132		1,12,574	
32,12,327	....	30,99,797	....	30,95,981	....
57,076	....	65,883	....	96,500	....
32,69,403		31,65,680		31,92,541	
2,82,958	....	2,67,776	....	2,54,900	....
1,52,444	....	1,26,654	....	1,57,922	....
4,35,402		3,94,430		4,12,912	

APPENDIX

Statement showing the expenditure on District Local Board Roads in the year 1921-22

1	1921-22.* 2	1922-23. 3	1923-24. 4
	Rs.	Rs.	Rs.
(1) Expenditure on metalled District Local Board roads for original works in the Presidency proper ..	1,80,641	2,11,788	2,45,635
(2) Expenditure on metalled District Local Board roads for original works in Sind ..	16,103	5,089	14,611
	1,96,744	2,16,827	2,60,246
(3) Expenditure on unmetalled District Local Board roads for original works in the Presidency proper ..	1,60,724†	94,250	1,28,734
(4) Expenditure on unmetalled District Local Board roads for original works in Sind ..	98,877	42,321	40,660
	2,59,601	1,36,571	1,78,394
(5) Expenditure on metalled District Local Board roads for maintenance in the Presidency proper ..	4,51,946	5,08,794	5,44,584
(6) Expenditure on metalled District Local Board roads for maintenance in Sind ..	7,455	4,924	2,901
	4,59,401	5,73,718	5,47,485
(7) Expenditure on unmetalled District Local Board roads for maintenance in the Presidency proper ..	5,18,795	4,55,087	5,30,217
(8) Expenditure on unmetalled District Local Board roads for maintenance in Sind ..	2,85,820	2,41,091	2,89,435
	8,04,615	6,96,778	8,19,652
(9) Expenditure on metalled and unmetalled District Local Board roads (original works and repairs) in the Ratnagiri District not included above ..	37,924	22,043	30,365
(10) Expenditure on metalled and unmetalled District Local Board roads (original works and repairs) in the Bijapur District not included above ..	....	....	....

* The figures in column 2 against items (1), (3), (5) and (7) do not include those

† This figure does not include the expenditure in the West Khandesh District as

IV.

Presidency proper and Sind (original works and repairs) from the to 1929-30.

1924-25. 5	1925-26. 6	1926-27. 7	1927-28. 8	1928-29. 9	1929-30. 10
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1,85,618	2,22,685	2,14,017	2,98,423	3,29,532	4,11,234
10,279	73,201	1,33,542	77,391	1,54,304	76,837
1,95,897	2,95,886	3,47,559	3,75,814	4,83,836	4,88,077
1,17,791	1,78,703	2,97,654	3,18,374	2,72,491	2,62,260
40,897	78,637	92,034	85,337	40,952	21,352
1,58,688	2,57,340	3,89,688	4,03,711	3,13,443	2,83,612
3,68,349	6,21,726	7,48,360	7,59,703	8,51,468	8,73,140
3,951	3,295	2,073	5,405	12,652	36,856
3,77,300	6,25,021	7,50,433	7,65,108	8,64,120	9,00,096
4,92,900	6,36,110	6,79,365	5,91,524	4,57,202	3,51,071
2,04,811	4,00,788	3,88,198	4,41,126	4,57,168	4,34,781
7,57,711	10,36,898	10,67,563	10,32,650	9,14,370	7,85,852
30,598	46,983	36,010	38,379	41,785	57,594
....	....	....	....	....	92,233

for the Sholapur District as the Commissioner reports that they are not available.
the Commissioner reports that the information is not available.

APPENDIX

Statement showing expenditure on establishment in the Roads and Buildings and percentage on the total outlay on works and

Expenditure on establishment in the Roads and Buildings Branch.							
Year.	41—Civil Works—Provincial (Transferred and Reserved).	60—Civil Works.	41—Civil Works—Central.	50—Military Works.	Deposit works.	Total.	Percentage on the total outlay on works and repairs in the Roads and Buildings Branch.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1921-22	29,06,055	..	1,08,683	45,258	2,84,092	34,35,888	19.26
1922-23	20,14,640	8,34,450	1,78,163	71,481	77,143	31,75,877	20.79
1923-24	15,84,488	8,10,045	67,802	38,560	6,88,354	31,80,039	19.88
1924-25	16,89,802	12,25,632	1,19,721	27,862	2,52,556	33,15,663	19.67
1925-26	18,80,417	12,05,078	1,01,876	60,049	2,58,535	35,23,955	20.66
1926-27	25,30,286	5,97,486	1,08,806	5,882	3,94,389	36,96,039	23.76
1927-28	21,90,448	5,59,107	1,49,132	5,042	2,97,270	32,00,999	24.96
1928-29	22,40,393	6,50,713	2,20,540	2,240	2,56,180	33,85,066	25.03
1929-30	22,45,450	7,33,867	1,56,773	3,638	2,34,897	33,74,625	25.26

Note.—The percentage of the establishment charges on the cost of works and repairs in the Irrigation reason is largely that the establishment charges in the Irrigation Branch include the cost of Special Sind and the Descau which has no connection with the execution of works and repairs, and that these including the *control and distribution of water*, which is debited in the accounts to "revenue management" "revenue management" are deducted from the total cost of establishment in the Irrigation Branch the less mainly on account of the increase in expenditure on works on the Lloyd Barrage and Canals

V.

the Irrigation Branches of the P. W. D. from the year 1921-22 to 1929-30 and repairs during that period in both the Branches.

Expenditure on Establishment in the Irrigation Branch.						Total Establish- ment charges in the Roads and Build- ings and Irrigation Branches.	Percentage on the total outlay of works and repairs in Roads and Buildings and Irri- gation Branches.
55—Con- struction of Irrigation Navigation Embank- ment and Drainage Works.	XIII—Works for which capital accounts are kept.	15—Other Revenue Expenditure financed from Ord- inary Reve- nues.	Deposit Works.	Total establish- ment charges.	Percent- age on the total outlay on works and repairs in the Irrigation Branch.		
9	10	11	12	13	14	15	16
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
11,53,734	13,85,080	6,68,651	2,770	32,11,115	33.59	66,47,003	24.26
14,20,751	13,44,901	5,34,327	1,993	33,01,072	32.22	64,77,849	25.38
21,87,703	14,43,222	4,32,013	2,056	40,65,084	33.89	72,55,023	25.87
20,10,785	17,37,724	5,26,361	492	51,75,362	28.73	84,91,025	24.35
32,21,647	17,90,343	5,10,228	2,681	55,42,899	21.62	90,06,864	21.23
35,56,959	18,08,385	5,94,989	3,207	59,63,540	30.56	96,60,479	27.54
36,98,956	10,20,773	7,80,312	3,847	64,03,888	26.00	96,13,887	25.04
39,04,670	21,35,989	6,16,001	2,750	66,59,960	25.51	1,00,45,026	25.36
42,26,873	21,08,302	6,18,312	1,012	69,54,499	23.26	1,03,29,124	23.88

Branch (column 14) is generally higher than that in the Roads and Buildings Branch (column 8). The Revenue Establishment employed entirely on "revenue management" work on certain canal systems in charges also include cost of part of the time of Irrigation establishment spent on revenue management and not to execution of works and repairs. If these establishment charges debited in the accounts to percentage on the cost of works and repairs will not be so divergent. The percentage in 1929-30 was Construction Project and on works and repairs in Sind due to floods.

APPENDIX VI.

BACK BAY RECLAMATION SCHEME, BOMBAY.

Results of sales of surplus stores, etc., to the end of 31st March 1930.

Particulars	Original cost	Net amount for which sold	Percentage of realisation to original cost
<i>To end of March 1929.</i>	Rs.	Rs.	
Dredging Section	2,33,208	26,636	11 per cent.
Other Sections	11,29,583	2,96,027	26 per cent.
Total ..	13,62,791	3,22,663	23 per cent.
<i>April 1929 to July 1929 inclusive.</i>			
Dredging Section	9,19,625	56,827	6 per cent.
Other Sections	2,83,392	13,424(a)	5 per cent.
Total ..	12,03,017	70,251	6 per cent.
<i>August 1929 to March 1930 inclusive.</i>			
All sections combined	2,25,080	64,816	29 per cent.
Total, 1929-30 ..	14,28,097	1,35,067	9 per cent.
Grand total to end of 1929-30 ..	27,90,888	4,57,730	16½ per cent.

Note (a) In some cases, during this period in particular, portions only of articles were sold. Then the original cost of the whole article is given, and realisation is for the part which was sold.

APPENDIX VII.

Members of the Standing Advisory Committee for the Back Bay Reclamation Scheme for the year 1929-30 :—

Name of Member.	Constituency.
1. Sir Leslie Hudson, Kt., M.L.C., J.P.	.. The Bombay Chamber of Commerce.
2. Manu Subedar, Esqr.	.. The Indian Merchants' Chamber, Bombay.
3. J. B. Petit, Esqr., M.L.C.	.. The Millowners' Association, Bombay.
4. Hooseinbhoj A. Lalljee, Esqr., M.L.C.	.. The Bombay Municipal Corporation.
5. *G. E. Bennett, Esqr., M.Sc., M.Inst.C.E.	} Nominated by Government.
6. T. K. Roddan, Esqr.	
7. R. H. A. Delves, Esqr., C.I.E., F.S.I.	

* Appointed with effect from 11th December 1929, *vice* J. McClure, Esqr., M.Inst.C.E., resigned.

APPENDIX VIII

APPENDIX

*Statement showing figures of consumption of water, number of connections, etc.,
Housing and Suburban*

Serial No.	Name of Scheme	No. of connections in the Scheme on		Average daily
		31st March 1929	31st March 1930	1928-29
1	2	3	4	5
1	Andheri including Marol, Vesawa and Amboli.	359	389	Gals. 120,785
2	Vile Parle ..	146	222	24,570
3	Santa Cruz and Juhu ..	365	398	241,100
4	and Khar ..	221	273	
5	Bandra ..	....	....	
6	Kurla ..	....	....	468,100
7	Ghatkopar ..	71	94	632,850
8	Trombay (Suburban Schemes II and III).	53	66	17,500
	Total of Suburban Scheme 19 .	1,215	1,442	32,500
	Suburban Scheme 21.			
8	Ambernath ..	25	28	85,500

N.B.—(1) Columns 7 and 8.—Cost of maintenance does not include interest on capital,

(2) Columns 9 and 10.—Receipts do not include premium and connection fees which

Note to Serial Nos. 1 and 7.—During the year under report, the pressure under to the scarcity of water in the Tansa lake. As a result of it, some premises for the reduction in the consumption of water during the year. The receipts include the dues of the last quarters (ending 31st March) of the previous year, reopening and notice fees, etc. Due to the variations in the above items, the tion in a particular area.

VIII.

in connection with the Salsette and Ambernath Water Supply Schemes of the late Division during 1929-30.

consumption	Cost of maintenance including purchase of water from Bombay Municipality		Receipts from sales of water and rent of meters, etc.		Remarks
	1928-29	1929-30	1928-29	1929-30	
6	7	8	9	10	11
Gals.	Rs.	Rs.	Rs.	Rs.	
119,400	18,336	18,722	42,525	43,325	
42,100	4,805	5,376	9,426	15,859	
254,200	33,152	41,744	80,996	92,959	
470,100	53,307	56,553	73,997	79,129	
622,000	75,440	73,461	1,05,172	1,02,427	
26,700	4,033	4,925	6,213	9,720	
49,200	7,759	6,732	12,090	11,265	
1,583,700	1,96,832	2,07,513	3,30,419	3,54,684	
* 222,000	19,463	35,824	26,922	46,524	*This includes the consumption of Badlapur village, G. I. P. Railway, Kalyan, etc.

depreciation, overhead establishment and general charges.

are credited to the capital account.

which the supply was made by the Bombay Municipality, was considerably lowered, due situated at high places, had to resort to well and other sources of supply. This accounts in a given year is the amount actually realized from 1st April to 31st March. They as also the arrears realised during the year, the rent of Government meters and receipts vary, and do not correspond with the rise or fall in the average daily consumption.

BOMBAY PRESIDENCY

PUBLIC WORKS DEPARTMENT
DIVISION MAP
1929-30

Scale—100 Miles to 1 Inch

BALUCHISTAN

ARABIAN

SEA



Secretary & Joint Secretary — are Chief Engineers
Administrative Zone 'A' — have Permanent Circle Divisions Red
Executive Division Zone 'B' — have Temporary do 'A' do Yellow
Zone 'C' shows nature of Executive Division in — as follows Head & Buildings Division (a) Street
Zone 'D' — as follows Irrigation do (b) River
Mixed a, b & c & Miscellaneous do White

DIAGRAM SHOWING PUBLIC WORKS DEPARTMENT ADMINISTRATION

AGENCY

RAJPUTANA
AGENCY

BOMBAY

DECCAN IRRIGATION AND IRRIGATION DEVELOPMENT
AND RESEARCH CIRCLES.

Sanitary Engineer — White President
Consulting Engineer do
Electrical Engineer do

CENTRAL INDIA
AGENCY
CENTRAL PROVINCES

HYDERABAD

MYSORE

66°

70°

74°

78°